The Honorable James L. Robart

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

POLARIS POWERLED TECHNOLOGIES, LLC, Plaintiff, v. NINTENDO CO., LTD., and NINTENDO OF AMERICA INC., Defendants.	No. 2:22-cv-00386-JLR **JOINT STATUS REPORT**

Pursuant to this Court's Order (Dkt. 91) requiring a Joint Status Report regarding the status of the case pending reexamination of the U.S. Patent No. 8,223,117 ("'117 patent"), Plaintiff Polaris PowerLED Technologies, LLC ("Polaris") and Defendants Nintendo Co., Ltd. and Nintendo of America Inc. (collectively "Nintendo") hereby submit the following Joint Status Report.

***Ex Parte* Reexamination**

The request for *ex parte* reexamination was filed on October 7, 2022. The *ex parte* reexamination was ordered on January 5, 2023.

On June 2, 2023, the first office action issued. As stated on page 3 of the first office action: "Claims 1, 4-7, 9, 15, 16, and 18 are rejected under 35 U.S.C. § 103. Claims 2, 3, and

ARÊTE LAW GROUP
1218 THIRD AVE., STE 2100
SEATTLE, WA 98101
O: (206) 428-3250

17 are confirmed patentable." (**Exhibit A** at 3.) Claim 2 is currently asserted against Nintendo. The reexamination is on-going.

On July 18, 2023, an *ex parte* reexamination interview occurred. As stated on page 2 of the *Ex Parte Reexamination Interview Summary*, "[a]greement on the patentability of the claims was not reached." (**Exhibit B** at 2.)

Polaris' response to the first office action is currently due on August 2, 2023.

***Inter Partes* Review**

A petition for *inter partes* review of the asserted claims of the '117 patent was filed on March 28, 2023.

On July 20, 2023, Polaris filed its patent owner preliminary response. (**Exhibit C**.)

The PTAB's institution decision is expected by October 20, 2023.

/ /

/ /

ARÊTE LAW GROUP
1218 THIRD AVE., STE 2100
SEATTLE, WA 98101
O: (206) 428-3250

DATED: July 31, 2023

KRAMER ALBERTI LIM & TONKOVICH LLP

By: */s/ Robert F. Kramer*
Robert F. Kramer (*pro hac vice*)
David Alberti (*pro hac vice*)
Sal Lim (*pro hac vice*)
Russell S. Tonkovich (*pro hac vice*)
Aidan Brewster (*pro hac vice*)
577 Airport Boulevard, Suite 250
Burlingame, CA 94010
Phone: (650) 825-4300
Fax: (650) 460-8443
rkramer@krameralberti.com
dalberti@kramerday.com
slim@kramerday.com
rtonkovich@kramerday.com
abrewster@kramerday.com

COOLEY LLP

By: */s/ Matthew J. Brigham*
Stephen R. Smith (*pro hac vice*)
1299 Pennsylvania Ave NW, Suite 700
Washington, D.C. 20004
Telephone: +1 202 842 7800
Fax: +1 202 842 7899
stephen.smith@cooley.com
aelkman@cooley.com

Matthew J. Brigham (*pro hac vice*)
Dena Chen (*pro hac vice*)
Deepa Kannappan (*pro hac vice*)
3175 Hanover Street
Palo Alto, CA 94304-1130
Tel. (650) 843-5000
Fax: (650) 849-7400
mbrigham@cooley.com
dchen@cooley.com
dkannappan@cooley.com

ARETE LAW GROUP PLLC

By: */s/ Jeremy E. Roller*
Jeremy E. Roller, WSBA No. 32021
1218 Third Avenue, Suite 2100
Seattle, WA 98101
Phone: (206) 428-3250
jroller@aretelaw.com

Attorneys for Plaintiff/Counterclaim Defendant Polaris PowerLED Technologies, LLC

LOWE GRAHAM JONES PLLC

By: */s/ Lawrence D. Graham*
Lawrence Graham (Bar No. 25402)
Mark Walters (Bar No. 30819)
LOWE GRAHAM JONES
1325 Fourth Avenue, Suite 1130
Seattle, WA 98101
Telephone: +1 206 381 3300
Fax: +1 206 381 3301

Attorneys for Defendant/Counterclaim Plaintiffs Nintendo of America Inc. and Nintendo Co., Ltd.

EXHIBIT A

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,119	10/07/2022	8223117	5173.001REX0	2917

26111 7590 06/02/2023

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER
LAROSE, COLIN M

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
06/02/2023	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

DO NOT USE IN PALM PRINTER

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

COVINGTON & BURLING, LLP
ATTN: PATENT DOCKETING
ONE CITYCENTER
850 TENTH STREET, NW
WASHINGTON, DC 20001-4956

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/019,119* .

PATENT UNDER REEXAMINATION *8223117* .

ART UNIT *3992* .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/019,119	Patent Under Reexamination 8223117	
	Examiner Colin LaRose	Art Unit 3992	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

a. ☑ Responsive to the communication(s) filed on 20 January 2023.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

b. ☐ This action is made FINAL.

c. ☑ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☑ Claims 1-7,9 and 15-18 are subject to reexamination.
1b. ☑ Claims 8,10-14 and 19-20 are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☑ Claims 2-3 and 17 are patentable and/or confirmed.
4. ☑ Claims 1-7,9 and 15-18 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
   1 ☐ been received.
   2 ☐ not been received.
   3 ☐ been filed in Application No. _____.
   4 ☐ been filed in reexamination Control No. _____.
   5 ☐ been received by the International Bureau in PCT application No. _____.
   * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: _____

cc: Requester (if third party requester)

NON-FINAL ACTION (REISSUE OF U.S. PATENT 8,223,117)

TABLE OF CONTENTS

I. ACKNOWLEDGEMENTS

This non-final Office action addresses *ex parte* reexamination proceeding no. 90/019,119 ("Instant Proceeding"). Based upon a review of the Instant Proceeding, the actual filing date is October 7, 2022 ("Actual Filing Date").

The Instant Proceeding is an *ex parte* reexamination of U.S. Patent No. 8,223,117 ("Patent Under Reexamination") titled "METHOD AND APPARATUS TO CONTROL DISPLAY BRIGHTNESS WITH AMBIENT LIGHT CONDITIONS." The Patent Under Reexamination was filed on December 17, 2008 ("Non-Provisional Filing Date") and assigned by the Office non-provisional U.S. patent application control number 12/336,990 ("Non-Provisional Application") and issued on July 17, 2012 with claims 1-20 ("Originally Patented Claims").

On January 5, 2023, an order granting reexamination for claims 1-7, 9, and 15-18 was issued.

On January 20, 2023, Patent Owner waived the right to file an optional Patent Owner Statement under 37 C.F.R. § 1.530.

II. STATUS OF CLAIMS

Claims 1-20 are currently pending ("Pending Claims").

Claims 1-7, 9, and 15-18 are currently examined ("Examined Claims").

Claims 8, 10-14, 19 and 20 are not subject to reexamination and therefore are withdrawn from consideration.

Regarding the Examined Claims and as a result of this Office action:

Claims 1, 4-7, 9, 15, 16, and 18 are rejected under 35 U.S.C. § 103.

Claims 2, 3, and 17 are confirmed patentable.

III. PRIOR ART CITED HEREIN

The following prior art patents and printed publications are cited herein:

U.S. Patent 4,386,345 ("Narveson");

U.S. Patent 5,270,818 ("Ottenstein");

U.S. Patent 7,110,062 ("Whitted"); and

JP-1999-316566 ("Pioneer").

IV. CLAIM INTERPRETATION – PHRASES INVOKING 35 U.S.C. § 112, SIXTH PARAGRAPH

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The claims in this proceeding are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when pre-AIA 35 U.S.C. § 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under pre-AIA 35 U.S.C. § 112, sixth paragraph:

(A) the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;

(B) the term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that"; and

(C) the term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word "means" (or "step") in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with pre-AIA 35 U.S.C. § 112, sixth paragraph. The presumption that the claim limitation is interpreted under §

112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word "means" (or "step") in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with § 112, sixth paragraph. The presumption that the claim limitation is not interpreted under § 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function. See *Williamson v. Citrix Online, LLC,* 792 F.3d 1339, 1348-49 (Fed. Cir. 2015). The challenger can rebut that presumption by demonstrating that a person of ordinary skill in the art would not understand the term to have sufficiently definite meaning as a name for structure. *See id.* at 1349. The challenger must demonstrate that, to a person of ordinary skill in the art, the term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function (emphasis added). *Id.*

Claim limitations in this proceeding that use the word "means" (or "step") are being interpreted under § 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this proceeding that do not use the word "means" (or "step") are not being interpreted under § 112, sixth paragraph, except as otherwise indicated in an Office action.

This proceeding includes one or more claim limitations that do not use the word "means," but are nonetheless being interpreted under § 112, sixth paragraph, because the claim limitations use a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitations are:

Functional Phrase #1 (claim 1) – "a first input configured to receive a user signal indicative of a user selectable brightness setting."

(A) "First input" is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.

(B) "Configured to receive a user signal indicative of a user selectable brightness setting" is functional language that modifies the placeholder "first input."

(C) "First input" is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function. Instead, it is a generic term that does not implicate any particular structure.

Functional Phrase #2 (claim 1) – "a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero."

(A) "Dark level bias" is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.

(B) "Configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero" is functional language that modifies the placeholder "dark level bias."

(C) "Dark level bias" is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function.

Functional Phrase #3 (claim 9) – "a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode."

(A) "Second input" is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.

(B) "Configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode" is functional language that modifies the placeholder "second input."

(C) "Second input" is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function. Instead, it is a generic term that does not implicate any particular structure.

Because these claim limitations are being interpreted under § 112, sixth paragraph, they are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

Based upon a review of the Patent Under Reexamination, the Examiner concludes that the corresponding structures for the above-identified Functional Phrases are disclosed as follows:

Functional Phrase #1 (claim 1) – "a first input configured to receive a user signal indicative of a user selectable brightness setting."

– corresponds to "dimming control," shown in FIG. 2, which by all accounts is a conventional dimmer control for a display device.

Functional Phrase #2 (claim 1) – "a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero."

– corresponds to "dark level bias," shown in FIG. 2, which by all accounts is a predetermined value that is provided via known methods such as hardware and/or software and used to adjust the combined signal (i.e., the output of multiplier 106) via a summation circuit. The dark level bias is "configured to adjust the combined signal to generate a brightness control signal … such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero" by providing a scaled dark level bias value (i.e., the output of 100) to a summing circuit (104), which adds the scaled dark level bias value to the combined signal (i.e., the output of the multiplier 106, which generates the product of the user-selectable dimming control with a scaled light sensor value).

Accordingly, the "dark level bias" is construed to correspond to a predetermined input value ("dark level bias" in FIG. 2) that is added (104) to the combined signal (output of 106) in order to adjust the combined signal so that the resulting brightness control signal is maintained above a predetermined level when the "light sensor" value is zero.

Note that the embodiment of FIG. 1 is not applicable to Functional Phrase #2 because in FIG. 1 the dark level bias is not configured to adjust the combined signal, as claimed. The dark level bias of FIG. 1 is used for generating the combined signal at multiplier 106, rather than for adjusting the combined signal after the combined signal has been generated.

Likewise, the embodiments of FIGS. 4 and 8-10 are not applicable to Functional Phrase #2.

For FIG. 4, the dark level bias is not "configured to adjust the combined signal to generate a brightness control signal … such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero," as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by "dutycycle" in the equation at column 7:20) is zero, then the brightness control signal is zero. In this instance, the dark level bias (characterized as "the first major term within the brackets" – see column 7:29-31) can ensure that the value within the brackets of the brightness control signal equation at column 7:15-24 is maintained above a predetermined value. However, when the output of the light sensor "ISRC" is zero, the brightness control signal is computed as the product of the dark level bias value (i.e., first major term within the brackets) and the user-selected brightness value (i.e., dutycycle); the resulting brightness control signal is not maintained above a predetermined level because a "dutycycle" value of zero will nullify the effect of the dark level bias and produce an output of zero.

Likewise, for FIG. 8, the brightness control signal is not "maintained above a predetermined level when the ambient light level decreases to approximately zero," as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light

level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by potentiometer "R3") indicates a resistance of zero, then the brightness control signal is zero. See brightness control signal equation at column 10:5-13.

Likewise, for FIG. 9, the brightness control signal is not "maintained above a predetermined level when the ambient light level decreases to approximately zero," as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by the binary value inputted to DAC 918) indicates a value of zero, then the brightness control signal is zero. See brightness control signal equation at column 11:6-15.

The embodiment of FIG. 10 includes circuitry substantially similar to that of FIG. 4, and therefore, the brightness control signal produced by FIG. 10 is assumed to be substantially similar to that of FIG. 4, wherein a user-selected brightness value of zero produces a brightness control signal of zero, even in instances where the ambient light level is zero. That is, FIG. 10 does not appear to include a dark level bias that ensures the brightness control signal is maintained at or above a predetermined level for low-light conditions, as claimed.

Functional Phrase #3 (claim 9) – "a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode."

– The second input is not illustrated in the embodiment of FIG. 2, however, it appears corresponds to an enable signal ("auto") and associated circuitry shown in FIG. 4 that are

operative to either include (auto mode) or exclude (manual mode) the output of the light sensor 402 in the calculation of the brightness control signal.

V. CLAIM REJECTIONS – 35 USC § 103 (OBVIOUSNESS)

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-7, 15, 16, and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pioneer (JP-1999-316566 – English translation) and Ottenstein (U.S. 5,270,818).

Regarding **claim 1**, Pioneer teaches a brightness control circuit with selective ambient light correction (FIG. 3) comprising:

a first input (38a-38d, FIG. 3) configured to receive a user signal indicative of a user selectable brightness setting (see paragraphs [0104]–[0106] – the user presses the adjusting keys 38a-38d to produce an operating signal Sop that indicates a user-selectable luminance (i.e., brightness) setting – the operation of which is substantially equivalent to a dimmer control inasmuch as both the adjusting keys 38 of Pioneer and a conventional dimmer control receive user input for selecting a luminance level; the operating signal Sop includes an "input value" obtained in step S7 of FIG. 7; the input value is denoted as yS2 and corresponds to a user-

selected luminance value that was inputted for a corresponding ambient light value xS2 – see paragraphs [0109]–[0120]);

a light sensor (25, FIG. 3) configured to sense ambient light and to output a sensing signal indicative of the ambient light level (see paragraph [0119] – the light sensor produces surrounding brightness value "xn");

a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal (see Equation 1 at paragraph [120] – a product based on the user signal yS2 and the surrounding brightness signal xn is generated to produce a combined signal denoted as { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1), where "*" indicates the multiplication operation; note that the claimed term "multiplier" is construed to denote a conventional multiplier that is implemented via software or analog/mixed circuitry and operative to receive input values and "selectively generate" the product of those values – i.e., generate a product using the values that are selected as input); and

a dark level bias (i.e., the "yS1" of Equation 1 at paragraph [0120]) configured to adjust the combined signal to generate a brightness control signal ("yn") that is used to control a brightness level of a visible display (i.e., as illustrated in FIG. 6(b), the value of yS1 is chosen for a corresponding ambient low-light value xS1 and as shown in Equation 1, the value of yS1 is used to adjust the combined signal; also, as shown in FIG. 7, the value yn denotes luminance adjustment value that directly corresponds to an actual luminance value that controls the brightness of a display on the basis of the determined ambient light level xn).

Pioneer does not appear to expressly teach that the dark level bias value (i.e., yS1) is configured to adjust the combined signal so as to generate a brightness control signal "such that

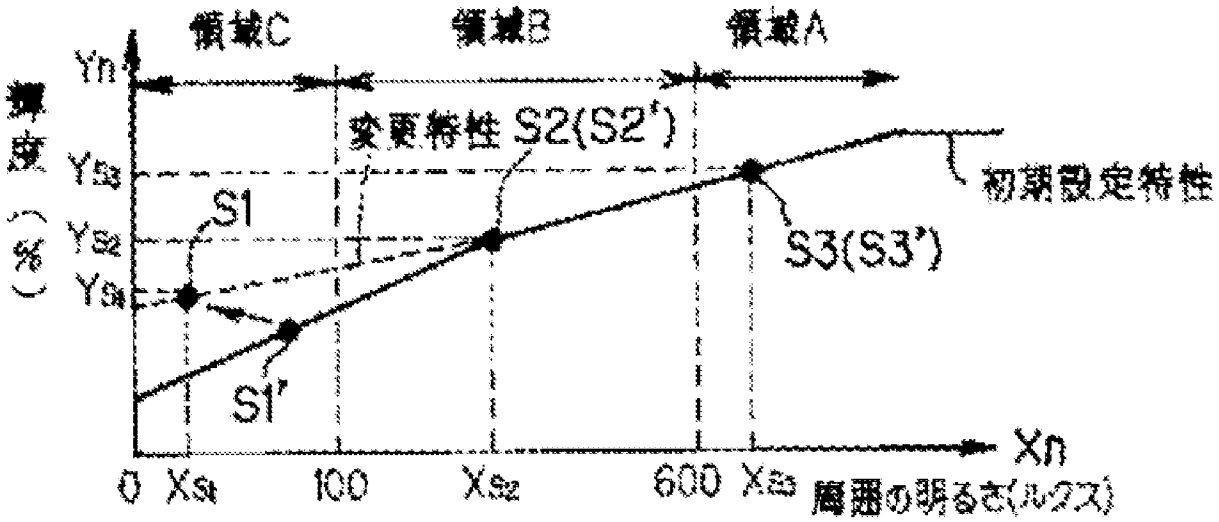
the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero," as claimed.

Although the user-inputted value yS1 is not expressly disclosed as being a dark-level bias that maintains the brightness control signal yn above a predetermined level when the ambient light level decreases to approximately zero, the value yS1 appears to function in this manner as a dark-level bias in the instance where a user sets the yS1 value when the ambient light level is zero (i.e., xS1 = 0).

According to Equation 1 at paragraph [0120], the user designates an input value yS1 corresponding to an ambient light value of xS1 in low-light conditions. Presumably, the user is permitted to select an input value yS1 corresponding to any ambient low-light level, including the instance in which there is no ambient light, i.e., xS1 = 0.

The Request at pp. 65-69 asserts that yS1 functions as a dark-level bias to keep the brightness control function yn above a predetermined level yS1. Allegedly, for an input value yS1 being set by the user when the ambient light level is zero (i.e., when xS1 = 0), the input value yS1 effectively functions as a dark level bias that maintains the brightness of the signal yn above a predetermined level when the detected surrounding brightness is approximately zero (i.e., xn = 0). In this case, the combined signal { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1) becomes zero because both xn and xS1 are zero, and the luminance adjustment value yn is computed as simply the user-selected input value yS1.

As shown in FIG. 6(b), the tentative characteristic curve in the dark region (i.e., region C) is generated by forming a straight line between the plotted values of S1 and S2:



Pioneer (untranslated version), FIG. 6(b)

As illustrated in FIG. 6(b), the brightness value yS1 is designated by the user for the corresponding ambient light low-level xS1, which is shown as being close to an ambient light level of zero. Due to the user's designation of S1 = (xS1, yS1), the brightness control signal yn has a value that is close to yS1 when the ambient light level xn = 0. Based on this observation and the construction of the graph in FIG. 6(b), it is apparent that a designation of a brightness value yS1 when xS1 = 0 produces a brightness control signal that is equal to yS1 for an input of xn = 0.

Accordingly, it appears that the user-designated value yS1 functions as a dark-level bias for instances in which yS1 is set as a non-zero value when the corresponding ambient light level is approximately zero. Those skilled in the art would have found it "obvious to try" setting a dark-level bias value yS1 for the instance in which the ambient light level is approximately zero because in the low ambient light region of the graph of FIG. 6(b) – i.e., region C – there are a finite number of xS1 values (namely, 0-100) for which a corresponding brightness value yS1 can be designated by the user, and based on the above observations, those skilled in the art would

have recognized that the yS1 value of Equation 1 functions as a so-called "dark level bias" to maintain the brightness signal yn at a predetermined level above zero when the combined signal of the equation equals zero. According to FIG. 6(b) of Pioneer, a user is permitted to designate a value S1 = (xS1, yS1) for setting a tentative luminance characteristic line in a low-light situation (i.e., for conditions in which xS1 < 100), and based on Equation 1 at paragraph [0120], those skilled in the art would have understood that the combined signal term of the equation becomes zero for instances in which xn = xS1, such that the luminance adjustment value yn is maintained at the predetermined value yS1 when xn = xS1 = 0. Accordingly, for instances in which xS1 = 0 (or approximately zero), yS1 inherently functions as a dark level bias, as claimed.

Regarding **claim 4**, Pioneer renders obvious the brightness control circuit of claim 1, wherein the dark level bias is added to the combined signal such that the amount of adjustment to the combined signal is independent of the user selectable brightness setting (see Equation 1 at paragraph [0120] – the dark level bias yS1 is added to the combined signal { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1), so that the amount of adjustment provided by yS1 is independent of the user-selected brightness setting yS2).

Regarding **claim 5**, Pioneer renders obvious the brightness control circuit of claim 4, wherein the dark level bias is added to an output of the multiplier (i.e., yS1 is added to the output of { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1)).

Regarding **claim 6**, Pioneer renders obvious the brightness control circuit of claim 1, further comprising an overdrive clamp circuit coupled to the brightness control signal to limit its

amplitude to a predefined range (see Pioneer at paragraph [0118] – a maximum luminance value is specified, and in instances where the brightness control signal yn reaches the maximum value, the line that corresponds to the signal becomes parallel to the x-axis, thereby clamping the output to the maximum value).

Regarding **claim 7**, Pioneer renders obvious the brightness control circuit of claim 1, wherein the brightness control signal is provided to a display driver to control backlight illumination of a liquid crystal display (see paragraph [0121]–[0123] – brightness control signal yn is converted to a quadratic signal, as shown in FIG. 7, and then inputted to drive circuit 37 to control the backlight of the LCD).

Regarding **claim 15**, Pioneer discloses a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (see paragraphs [0104]–[0106] – the user presses the adjusting keys 38a-38d to produce an operating signal Sop that indicates a user-selectable luminance (i.e., brightness) setting – the operation of which is substantially equivalent to a dimmer control inasmuch as both the adjusting keys 38 of Pioneer and a conventional dimmer control receive user input for selecting a luminance level; the operating signal Sop includes an "input value" obtained in step S7 of FIG. 7; the input value is denoted as yS2 and corresponds to a user-selected luminance value that was inputted for a corresponding ambient light value xS2 – see paragraphs [0109]–[0120]);

selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (see Equation 1 at paragraph [120] – a

product based on the user signal yS2 and the surrounding brightness signal xn is generated to produce a combined signal denoted as { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1), where "*" indicates the multiplication operation); and

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display (i.e., as illustrated in FIG. 6(b), the value of yS1 is chosen for a corresponding ambient low-light value xS1 and as shown in Equation 1, the value of yS1 is used to adjust the combined signal; also, as shown in FIG. 7, the value yn denotes luminance adjustment value that directly corresponds to an actual luminance value that controls the brightness of a display on the basis of the determined ambient light level xn).

Pioneer does not appear to expressly teach that the dark level bias value (i.e., yS1) is configured to adjust the combined signal so as to generate a brightness control signal "such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero," as claimed.

However, this limitation is considered to be obvious in view of Pioneer's disclosure for the same reasons as given above for claim 1.

Regarding **claim 16**, Pioneer renders obvious the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (i.e., Pioneer's method is implemented via processing circuit 30 (FIG. 3), which appears to be a mixed-signal circuit).

Regarding **claim 18**, Pioneer renders obvious the method of claim 15, wherein the dark level bias is added to the combined signal after selective multiplication such that the amount of adjustment to the combined signal is independent of the input signal and the sense signal (see Equation 1 at paragraph [0120] – the dark level bias yS1 is added to the combined signal { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1), so that the amount of adjustment provided by yS1 is independent of the user-selected brightness setting yS2).

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pioneer (JP-1999-316566) and Ottenstein (U.S. 5,270,818).

Regarding **claim 9**, Pioneer renders obvious the brightness control circuit of claim 1, but does not appear to disclose or suggest a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or a manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode.

Ottenstein discloses an arrangement for automatically controlling the brightness of cockpit displays. In particular, Ottenstein's system utilizes ambient light sensors (12 and 13) to produce signals indicative of the ambient light and a brightness control 15 that produces a signal indicative of a user-selected brightness setting. Ottenstein utilizes a multiplier to selectively generate a combined signal based on the maximum ambient light signal and the user-selected brightness setting, as shown in FIG. 1.

In addition, Ottenstein includes an auto mode/manual mode switch 14 that enables or disables the operation of the automatic brightness control. As shown in FIG. 1, when the auto

mode is enabled, then the maximum ambient light signal is multiplied by the product of the DPU brightness signal 15, DPU raster signal 16, and the harmonization gain 17. When the manual mode is enabled, then the maximum ambient light is divided by itself to produce an output value of 1 and effectively nullify the influence of the ambient light sensor (i.e., the product of user inputs 15-17 is multiplied by 1). Therefore, the output of the light sensor is effectively utilized or disregarded based on whether the user selects the Auto or Manual mode of operation.

It would have been obvious to modify Pioneer by the teachings of Ottenstein to include an auto/manual input switch that selectively operates the brightness control circuit in auto or manual mode, as claimed, because the disclosures of both Pioneer and Ottenstein are directed to controlling the brightness of displays based on an ambient brightness value and a user-selected brightness value, and Ottenstein establishes that incorporating an auto/manual switch for including or excluding the contribution of an ambient light signal was a conventional way in which a brightness control system automatically adjusts the brightness of a screen using ambient lighting conditions and such incorporation provides the benefit of allowing the user to choose whether a brightness control signal should be adjusted according to an ambient light level (auto mode) or not (manual mode).

Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Narveson (U.S. 4,386,345) and Whitted (U.S. 7,110,062).

Regarding **claim 15**, Narveson teaches a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (FIG. 4 – brightness control 30 produces user signal V);

selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (FIG. 4 – multiplier 54 selectively generates a combined signal "(CR – 1) (RA)," which is based on the selected value V and ambient light level A).

Narveson does not appear to disclose:

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

Whitted discloses an LCD with power saving features. In particular, Whitted discloses a brightness control system (e.g., FIG. 12) that produces a brightness control signal based on an ambient light level produced by a light sensor 502 and a user-selected brightness control signal produced by brightness control circuit 504. The intensity of a display's backlight 510 is adjusted as a function of the ambient light signal and brightness control signal so that the perceived brightness of the display will remain generally constant despite changes in ambient light conditions (see Whitted at column 8:9-16). When the output of the ambient light sensor 502 indicates an increase in the intensity of the ambient light striking the screen, the power to the backlight 510 will be increased; on the other hand, when the intensity of the ambient light striking the screen decreases, the intensity control circuit decreases the power supplied to the backlight 502 (see id. at column 8:16-22).

Whitted teaches that a minimum power level for the backlight is predetermined to insure that the display will be readable in low light conditions. That is, even if the output of the ambient light sensor indicates little or no incident light, the intensity control circuit 503 does not lower the power output to the backlight below the predetermined threshold to insure that in dark or dimly lit conditions images on the display panel will remain visible (see id. at column 8:23-35).

It would have been obvious to modify the brightness control system of Narveson to adjust the combined signal with a dark level bias, as claimed, since Whitted teaches that maintaining a brightness control signal for powering a display backlight above a predetermined threshold level when the ambient light level decreases to approximately zero ensures that images on the display panel remain visible (see Whitted at column 8:23-35). Based on Whitted's teachings, those skilled in the art would have recognized that, in the absence of such a dark level bias, an automatic brightness control system controlling the brightness of a display panel may produce screen images that are not visible (i.e., not bright enough to be perceived) when the ambient light level is sufficiently low, and therefore, the dark level bias is useful for maintaining a minimum threshold of power for display to ensure the screen is visible in low-light conditions.

Regarding **claim 16**, the combination of Narveson and Whitted teaches the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (see Narveson at column 11:1-13 – the method can be implemented using a control program executed by a microprocessor, dedicated digital logic, or analog circuitry).

Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Whitted (U.S. 7,110,062) and Ottenstein (U.S. 5,270,818).

Regarding **claim 15**, Whitted teaches a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (brightness control 504, FIG. 12);

~~selectively multiplying~~ combining the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (see column 8:9-12 – a combined signal, i.e., a function of the output of a photo-sensor and a user-selected brightness control signal, is obtained); and

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero (see column 8:23-35 – a dark level bias is predetermined as a minimum power level to insure that the intensity control circuit 503 does not lower the power output to the backlight 510 of the display below the predetermined level in low-light conditions).

Whitted does not appear to disclose "selectively multiplying" to generate a combined signal based on both the user signal and the sensing signal, as claimed. Instead, Whitted merely teaches that the intensity control circuit 503 determines the amount of power supplied to the backlight 510 of the display device as a function of the output of the photo-sensor 502 and the received brightness control signal, such that when the output of the photo-sensor 502 indicates an increase in the intensity of ambient light striking the screen 206, the power to the backlight will

be increased, and as the intensity of the ambient light striking the screen 206 decreases, the power to the backlight 206 will be decreased (see column 8:9-22). Whitted does not appear to teach that the aforementioned "function" involves generating a combined signal of the outputs of the photo-sensor and brightness control signal using a multiplier, as claimed, or that the generating is executed on a selective basis, as claimed.

Ottenstein discloses an arrangement for automatically controlling the brightness of cockpit displays. In particular, Ottenstein's system utilizes ambient light sensors (12 and 13) to produce signals indicative of the ambient light and a brightness control 15 that produces a signal indicative of a user-selected brightness setting. Ottenstein utilizes a multiplier to selectively generate a combined signal based on the maximum ambient light signal and the user-selected brightness setting, as shown below:

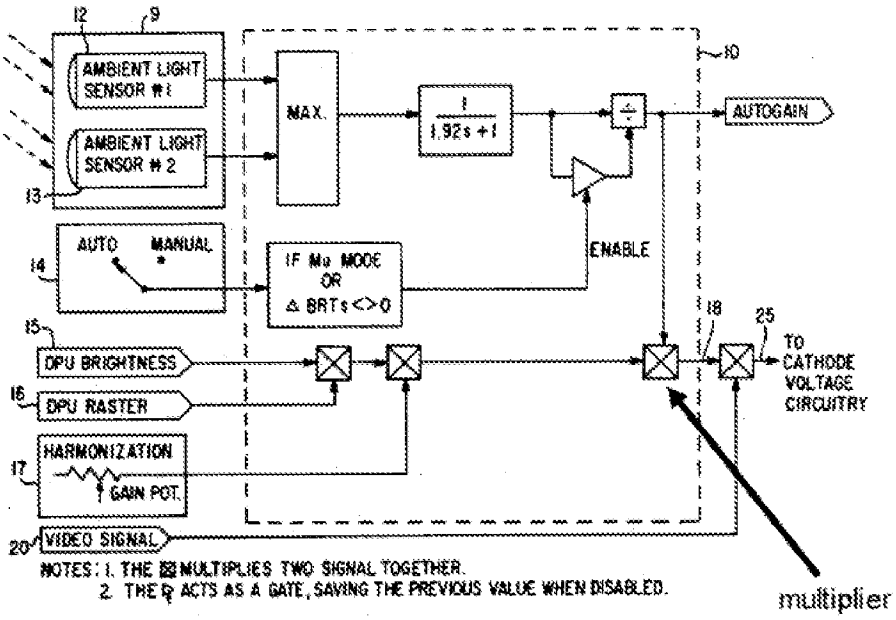


FIG. 1 of Ottenstein (annotated by Examiner)

It would have been obvious to modify Whitted by the teachings of Ottenstein to selectively generate a combined signal by "multiplying," as claimed, because the disclosures of both Whitted and Ottenstein are directed to controlling the brightness of displays based on an ambient brightness value and a user-selected brightness value, and Ottenstein establishes that selectively generating a combined signal based on multiplying an ambient light signal with a user-selected brightness value was a conventional way in which a brightness control system automatically adjusts the brightness of a screen using (i.e., as a function of) ambient lighting conditions and a user-selected brightness value. Based on Ottenstein's teaching that it was conventional to generate a combined signal for adjusting the brightness of a display device based on the multiplication of the output of a photo-sensor and a user-selected brightness control signal, those skilled in the art would have recognized that Whitted's "function" described column 8:9-12 could likewise be derived using a multiplier that multiplies the output of a photo-sensor and a user-selected brightness control signal to achieve predicable results.

Regarding **claim 16**, the combination of Whitted and Ottenstein teaches the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (see Whitted at column 9:31-41 – automatic brightness control is executed via software).

VI. ALLOWABLE SUBJECT MATTER

Claims 2, 3, and 17 are confirmed patentable for the following reasons.

Regarding **claim 2**, Pioneer does not appear to disclose or suggest that the dark level bias is provided to the multiplier, as claimed. Rather, the dark level bias involves adding the value yS1 to the combined signal { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1) in Equation 1 at paragraph [0120] of Pioneer after the combined signal has been generated via multiplication.

Claim 3 is confirmed patentable for dependence from claim 2.

Regarding **claim 17**, neither Pioneer nor Whitted appears to disclose or suggest the dark level bias is added to the sense signal before selective multiplication, as claimed. In Pioneer, the dark level bias involves adding the value yS1 to the combined signal { (yS2 – yS1) / (xS2 – xS1) } * (xn – xS1) in Equation 1 at paragraph [0120] after the combined signal has been generated via multiplication. Whitted merely teaches that a minimum power level is predetermined to insure that the display will be readable in low light conditions but does not appear to disclose that the predetermined amount is added to an ambient light signal, as claimed.

VII. CONCLUSION

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings

"will be conducted with special dispatch" (37 C.F.R. § 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 C.F.R. § 1.550(c).

All correspondence relating to this ex parte reexamination proceeding should be directed:

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Colin LaRose whose telephone number is 571-272-7423.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew J. Fischer can be reached at 571-272-6779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

General inquiries may also be directed to the Central Reexamination Unit customer service line at (571) 272-7705.

/COLIN M LAROSE/
Primary Examiner, Art Unit 3992

Conferees:

/NICK CORSARO/
Primary Examiner, Art Unit 3992

/ANDREW J. FISCHER/
Supervisory Patent Reexamination Specialist, Art Unit 3992

EXHIBIT B

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,119	10/07/2022	8223117	5173.001REX0	2917

26111 7590 07/21/2023

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER
LAROSE, COLIN M

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
07/21/2023	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

DO NOT USE IN PALM PRINTER

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

COVINGTON & BURLING, LLP
ATTN: PATENT DOCKETING
ONE CITYCENTER
850 TENTH STREET, NW
WASHINGTON, DC 2001-4956

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/019,119* .

PATENT UNDER REEXAMINATION *8223117* .

ART UNIT *3992* .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Ex Parte Reexamination Interview Summary

All participants:

(1) Colin LaRose (USPTO)

(2) Hetul Patel (USPTO)

(3) Nick Corsaro (USPTO)

(4) Jason A. Fitzsimmons (Reg. No. 65,367)

(5) Dr. Russell Tonkovich (Reg. No. 64,101)

(6) Dr. Robert Stevenson

(7) Aidan Brewster

Summary of the interview:

Discussed the attached slides, notably, (1) whether Pioneer's tentative characteristics line produced by Equation 1 corresponds to a "brightness control signal that is used to control a brightness level of a visible display"; (2) whether claim 1 corresponds to FIG. 1 of the '117 Patent because it appears in FIG. 1 that the dark level bias is used to generate the combined signal (which is the output of multiplier 106) rather than to adjust the combined signal after it has been generated; (3) the interpretation of "dark level bias"; (4) whether Pioneer and Whitted disclose a dark level bias; (5) whether "dark level bias" should invoke § 112, sixth paragraph; and (6) the interpretation of "adjust."

Agreement on the patentability of the claims was not reached. Patent Owner's response to the non-final rejection is forthcoming.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Colin LaRose whose telephone number is 571-272-7423.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew J. Fischer can be reached at 571-272-6779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

General inquiries may also be directed to the Central Reexamination Unit customer service line at (571) 272-7705.

/COLIN M LAROSE/
Primary Examiner, Art Unit 3992

Conferees:

/NICK CORSARO/
Primary Examiner, Art Unit 3992

/H.B.P/
Supervisory Patent Examiner, Art Unit 3992

Ex Parte Reexamination Interview Summary	**Control No.** 90/019,119	**Patent Under Reexamination** 8223117	
	Examiner Colin LaRose	**Art Unit** 3992	**AIA (FITF) Status** No

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) see attached list	(3) _____
(2) _____	(4) _____

Date of Interview: 18 July 2023

Type: a) ☐ Telephonic b) ☑ Video Conference
c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owners representative)

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☑ No.
If Yes, brief description: _____

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☑ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 1 .

Identification of prior art discussed: Pioneer and Whitted .

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: see attached summary .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW
(37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNERS STATEMENT CAN NOT BE WAIVED.
EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).

/COLIN M LAROSE/ Primary Examiner, Art Unit 3992	/Nick Corsaro/ Primary Examiner AU 3992	

cc: Requester (if third party requester)

EXHIBIT C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NINTENDO CO., LTD., and
NINTENDO OF AMERICA INC.,
Petitioner

v.

POLARIS POWERLED TECHNOLOGIES, LLC,
Patent Owner

Case IPR2023-00778
U.S. Patent No. 8,223,117 B2

PATENT OWNER PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107(a)

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Claim Construction Order entered on January 7, 2019, in *Polaris PowerLED Techs., LLC v. Samsung Elecs. Am., Inc*., No. 2:17- cv-00715 (E.D. Tex. Jan 7, 2019), ECF No. 138
2002	Claim Construction Order entered on November 26, 2019, in *Polaris PowerLED Techs., LLC v. VIZIO, Inc.*, No. 8:18-cv-01571 (C.D. Cal. Nov. 26, 2019), ECF No. 212
2003	Claim Construction Order re Supplemental Claim Construction entered on December 23, 2019, in *Polaris PowerLED Tech., LLC v. VIZIO, Inc.*, No. 8:18-cv-01571 (C.D. Cal. Dec. 23, 2019), ECF No. 264
2004	"Basic Televisions and Video Systems", Bernard Grob, (1984, 5th ed.) ("Grob") [Excerpts]
2005	Patent Owner Supplemental Excerpts from Donald G. Fink, Television Engineering Handbook, First Edition, McGraw-Hill Book Company (1957) ("Fink II") [Excerpt]
2006	RCA Television User's Guide, Model CR20310 (2001) [Excerpt]
2007	RCA Television User's Guide (2004) [Excerpt]
2008	IEEE 100, The Authoritative Dictionary of IEEE Standards Terms, 7th ed. (2000) ("IEEE Dictionary) [Excerpts]
2009	Microsoft Computer Dictionary, 5th ed. (2002) ("MS Computer Dictionary") [Excerpt]
2010	Office Action dated September 6, 2007, excerpt of the file history of U.S. Patent No. 7,468,722 ("'722 patent")
2011	Petition for *Inter Partes* Review, *Samsung Electronics Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2018-01262 (P.T.A.B. June 15, 2018), Paper 4

Exhibit No.	Description
2012	Patent Owner's Preliminary Response, *Samsung Electronics Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2018-01262 (P.T.A.B. Oct. 26, 2018), Paper 13
2013	Institution Decision, *Samsung Electronics Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2018-01262 (P.T.A.B. Jan. 17, 2019), Paper 14
2014	Petition for *Inter Partes* Review, *VIZIO, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-00043 (P.T.A.B. Oct. 15, 2019), Paper 2
2015	Public version, Patent Owner's Preliminary Response, *VIZIO, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-00043 (P.T.A.B. Feb. 6, 2020), Paper 10
2016	Institution Decision, *VIZIO, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-00043 (P.T.A.B. May 4, 2020), Paper 30
2017	Request for Rehearing Decision, *VIZIO, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-00043 (P.T.A.B. Sept. 15, 2020), Paper 32
2018	Petition for *Inter Partes* Review, *LG Electronics, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01283 (P.T.A.B. July 16, 2020), Paper 3
2019	Patent Owner's Preliminary Response, *LG Electronics, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01283 (P.T.A.B. Dec. 17, 2020), Paper 8
2020	Institution Decision, *LG Electronics, Inc. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01283 (P.T.A.B. Mar. 9, 2021), Paper 9
2021	Petition for *Inter Partes* Review, *Hisense Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01337 (P.T.A.B. July 21, 2020), Paper 1

Exhibit No.	Description
2022	Patent Owner's Preliminary Response, *Hisense Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01337 (P.T.A.B. Dec. 17, 2020), Paper 9
2023	Institution Decision, *Hisense Co., Ltd. v. Polaris PowerLED Technologies, LLC*, Case No. IPR2020-01337 (P.T.A.B. Mar. 9, 2021), Paper 11
2024	Reexamination Control No. 90/019,119 Office Action, filed June 2, 2023
2025	Reexamination Control No. 90/019,119 Information Disclosure Statement, filed July 19, 2023

I. INTRODUCTION

Plaintiff Polaris PowerLED Technologies, LLC ("Patent Owner") submits this Preliminary Response to the Petition filed by Nintendo Co., Ltd. and Nintendo of America Inc. (collectively, "Petitioner") requesting *inter partes* review of claims 1-2, 7, 9, and 15-16 of U.S. Patent No. 8,223,117 ("the '117 patent"). Patent Owner respectfully requests that the Board deny institution because Petitioner fails to show a reasonable likelihood of prevailing as to any challenged claim. Moreover, the Board should exercise its discretion under 35 U.S.C. § 314(a) and decline institution in view of four prior failed IPRs and an ongoing *ex parte* reexamination.

II. LEVEL OF ORDINARY SKILL IN THE ART

To streamline disputes at this stage, this paper applies Petitioner's level of ordinary skill without agreeing to it. Pet., 7.

III. CLAIM CONSTRUCTION

The Board construes claims pursuant to *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). Two district courts have already construed the '117 patent. EX2001-2003. Consistent with the district court constructions, Patent Owner requests that the Board construe "a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal" in claim 1 and "selectively multiplying the input signal with a sense signal to generate a combined signal" in claim 15 to require multiplication.

Term	District Court's Construction
"a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal"	"a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal, wherein the combined signal includes, but is not necessarily limited to, ***the product of the user signal and the sensing signal***"
"selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level"	"selectively ***multiplying*** the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level and wherein the combined signal includes, but is not necessarily limited to, the ***product of the input signal and the sense signal***"

EX2001, 29-30; *see also* EX2002, 34.[1]

Further, the district court explained that the plain meaning of "multiplier" and "multiplying" require multiplication.

> While ***"multiplier" and "multiplying" require generating a mathematical product*** . . .
>
> The language of ***Claim 15***, "***selectively multiplying*** the input signal

[1] All emphasis and annotations added unless otherwise stated.

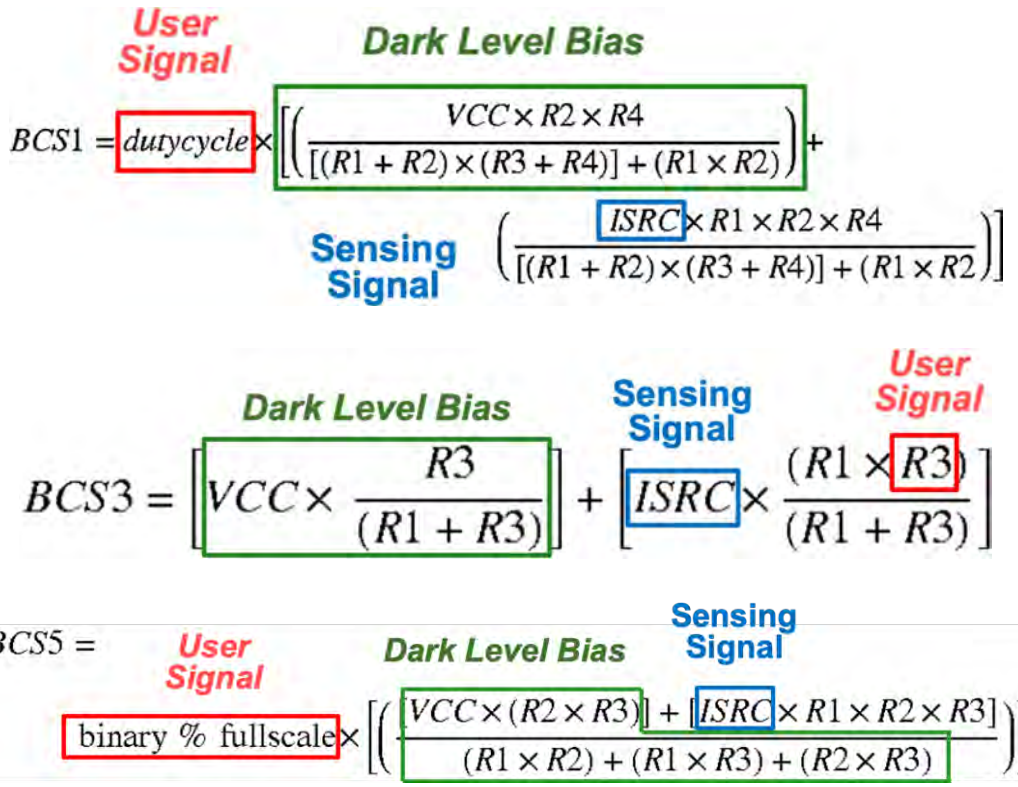
with a sense signal to generate a combined signal," ***expressly requires multiplying the input signal by the sense signal***.

The Court agrees with Defendants that a multiplier multiplies . . .

That a ***multiplier necessarily multiplies*** . . .

EX2001, 14-17.

The district court further explained that the intrinsic evidence shows actual multiplication by the "multiplier." *Id.*, 17-19; *see also id.*, 3-5. For example, the equations for Figures 4 (BCS1), 8 (BCS3), and 9 (BCA5) show multiplication being performed by the multiplier.



Id., 7:17-32, 10:9-12, 11:10-15.

Therefore, consistent with the intrinsic evidence and the prior district court's claim constructions, the Board should construe "multiplier" and "multiplying" to require multiplication.

IV. GROUNDS 1 AND 2 DO NOT RENDER THE CHALLENGED CLAIMS OBVIOUS.

Ground 1 asserts that claims 1-2, 9, and 15-16 are obvious over Stoughton, Mierzwinski, and Nagai. Ground 2 asserts that, in further view of Shimomura, dependent claim 7 is obvious. Because Ground 1 does not have a reasonable likelihood of prevailing against independent claims 1 and 15, Grounds 1 and 2 fail against all challenged claims.

A. Ground 1 combination does not disclose or render obvious "a user [input] signal indicative of a user selectable brightness setting."

Petitioner alleges the output of BRM 24 is the "user signal" and "user input signal" (collectively "user [input] signal") in claims 1 and 15, respectively, because it is indicative of the "viewer selected *contrast* level," which Petitioner contends is the "user selectable *brightness* setting" in the challenged claims. Pet., 17. However, as explained below, "contrast" and "brightness" are separate technical parameters. A person of ordinary skill in the art ("POSA") would not understand the disclosure of a "contrast level" to be a disclosure of a "brightness setting."

1. A POSA would have understood "brightness" and "contrast" to be different parameters controlled by different technical mechanisms.

Patent claims must be interpreted from the perspective of "a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313. Stoughton, Mierzwinski, and Nagai all concern cathode ray tube ("CRT") displays. Petitioner's arguments ignore the technical meaning of "brightness" and "contrast" to a POSA in the context of CRT displays.

To a POSA, "contrast" and "brightness" are two entirely different concepts that are implemented by entirely different technical mechanisms. ***First***, as evidenced in technical literature and in television manuals, POSAs and laypersons recognized that "contrast" and "brightness" refer to entirely different concepts. For example, RCA, which is related to the assignee of Stoughton (i.e., RCA Licensing Corporation), defines "contrast" and "brightness" differently in its *own* CRT television manuals. "Brightness" is defined by the "overall" "brightness of the picture" whereas "contrast" is defined as the "difference between light and dark areas of the picture."

The Picture Menu

The Picture Quality menu contains five slider controls that adjust the TV's picture. Use the CH ^/v to select an item, and use the VOL +/- adjust the controls.

Brightness Adjusts the brightness of the picture.

Contrast Adjusts the difference between light and dark areas of the picture.

Colour Adjusts the richness of the color.

Sharpness Adjusts the crispness of edges in the picture.

Magic Toggles between four preset picture settings:

Personal Sets the picture quality to the settings you've defined.

Original Returns the picture settings to their factory presets.

-Brightness Sets the picture to a darker overall level.

+Brightness Sets the picture to a brighter overall level.

EX2006, 12; *see also* EX2007, 22-23.

CRT televisions, like RCA televisions, allow "brightness" and "contrast" to be controlled separately and independently from each other, confirming that these are two different concepts employing two different mechanisms of adjusting the picture. Accordingly, a POSA (and laypersons) would have understood that "brightness" and "contrast" are different parameters.

Technical references similarly define "brightness" and "contrast" as distinct concepts. For example, "Basic Televisions and Video Systems" by Bernard Grob ("Grob") explains that "brightness" and "contrast" refer to different picture qualities.

> ***Brightness is the overall, or average, intensity of illumination*** and it determines the ***background level*** in the reproduced picture. Individual picture elements can vary above and below this average brightness level.

> ***By contrast we mean the difference in intensity between black parts and white parts*** of the reproduced picture.

EX2004, 34-35; *see also id.*, 40.

Even the Fink reference that Petitioner relies on defines these two concepts differently in its glossary.

> Brightness. The attribute of visual perception in accordance with which an area appears to ***emit more or less light***.
> Contrast. The ***ratio between the maximum and minimum brightness*** values in a picture.

EX1008, 50, 58. Therefore, whereas "contrast" is a ratio (or difference) of the maximum and minimum brightness in a picture, "brightness" refers to the overall average emission of light from the display. Because it is a ratio, the same "contrast" can exist at different levels of brightness.

Second, "contrast" and "brightness" are controlled by two different technical mechanisms confirming that these are separate concepts in the art. In CRT systems like Stoughton, Mierzwinski, and Nagai, brightness is controlled by varying the DC bias control of the grid-cathode circuit of the picture tube (i.e., CRT) while contrast is controlled by varying the peak-to-peak amplitude of the AC video signal.[2] Grob's "Basic Televisions and Video Systems" explains:

[2] "Picture tube" is used interchangeably with CRT in the art.

> ***Brightness*** on the screen ***depends on the amount of high voltage for the picture tube and its dc bias in the grid-cathode circuit***. In television receivers, the ***brightness control varies the dc bias of the picture tube***.
>
> **Contrast:** The amount of ac video signal determines the contrast of the reproduced picture. The ***ac signal amplitude determines how intense the white will be compared with the black parts of the signal. In television receivers, the contrast control varies the peak-to-peak (p-p) amplitude of the ac video signal*** coupled to the grid-cathode circuit of the picture tube."

EX2004, 34-35. Grob summarizes the differences between "contrast" and "brightness," clarifying that "contrast" is adjusted by changing the "amplitude of the AC video signal" whereas "brightness" is adjusted by changing the DC bias of the picture tube.

PICTURE QUALITIES

QUALITY	PICTURE	SIGNAL
Contrast	Range between black and white	Amplitude of ac video signal
Brightness	Background illumination	DC bias on picture tube

EX2004, 40.

Petitioner's Fink reference agrees that brightness is controlled by bias to the picture tube whereas contrast is adjusted by manipulating the video signal.

> ***Brightness control***. The manual ***bias control of the picture tube***.
>
> ***Contrast control.*** The manual ***gain control for the picture signal***.

EX1008, 51, 58. In a portion not included in Petitioner's excerpt of Fink, Fink illustrates that brightness is controlled by bias to the picture tube whereas contrast is controlled by modifying the video signal.

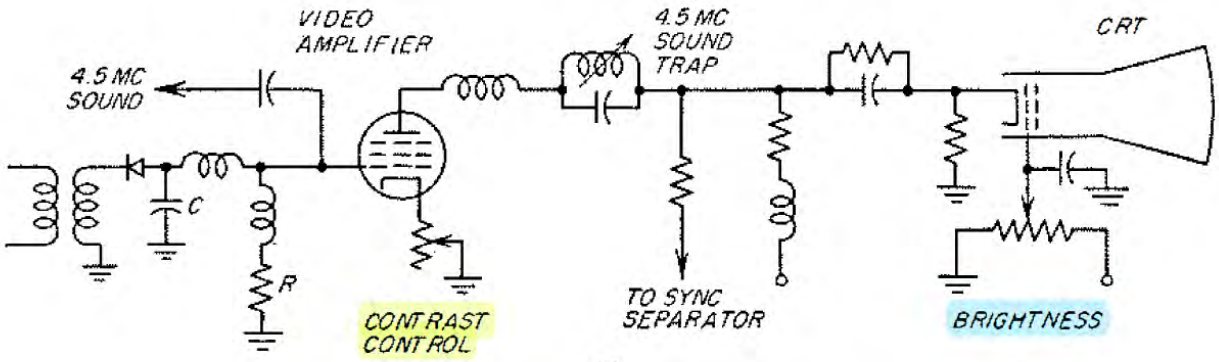


FIG. 15-11A. Single-stage video amplifier—d-c coupled.

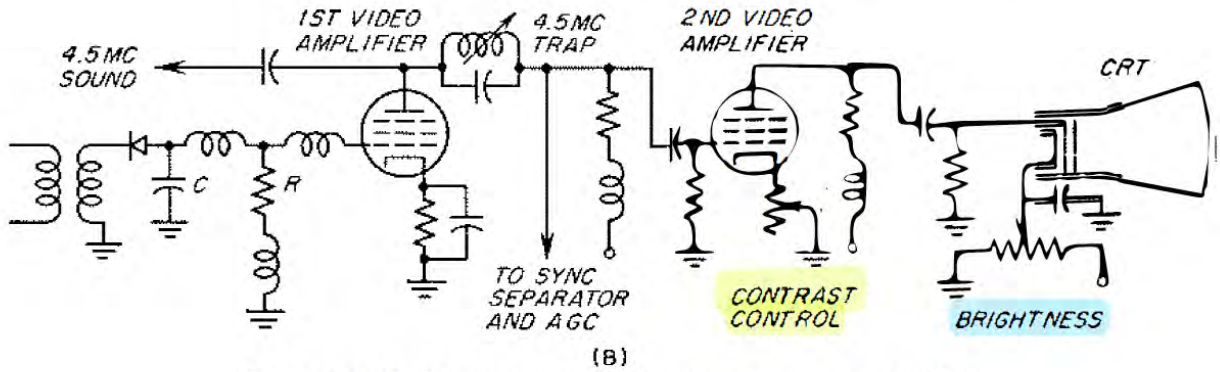


FIG. 15-11B. Two-stage video amplifier—a-c coupled.

EX2005, FIGs. 15-11A, 15-11B.

Stoughton's disclosure is consistent with Grob and Fink, stating that contrast control is performed by controlling the peak-to-peak amplitude of a video signal.

> In a television receiver, a ***contrast control signal for controlling the amplitude of a video signal*** . . .
>
> A video signal processing and display system such as a television receiver commonly includes a viewer adjustable device (e.g., a

> potentiometer or a remote control unit) for manually ***controlling the peak-to-peak amplitude of a video signal to achieve a desired level of contrast*** for a picture displayed by an image reproducing kinescope of the system.
>
> Such DAC controls are useful devices for ***controlling the amplitude of a video signal such as for the purpose of contrast control*** (sometimes referred to as picture control).
>
> The ***peak-to-peak amplitude of the video signal, and hence the contrast of a displayed image***, is ultimately controlled in response to a control signal from a source 20.

EX1003, Abstract, 1:10-16, 1:50-53, 2:37-40. Stoughton does not even mention "brightness" because Stoughton is configured to *only* change the amplitude of the video signal to control contrast. *Id*.

Therefore, "contrast" and "brightness" are controlled through different technical mechanisms. Whereas "contrast" involves an adjustment in the amplitude of the AC video signal, "brightness" involves a DC bias applied to the grid-cathode circuitry that increases the overall intensity of the picture tube. *Id*. Accordingly, circuits for contrast and brightness are not interchangeable.

2. Prosecution history confirms that "contrast" and "brightness" are separate and distinct in the context of the '117 patent.

The prosecution history confirms that "contrast" and "brightness" are distinct concepts. In the prosecution of U.S. Patent No. 7,468,722, the parent of the

'117 patent, the Examiner distinguished between "brightness" and "contrast' as two different, independently controllable settings.

> It would have been obvious to a person of ordinary skill in the art at the time the invention was made to ***modify Park and Sanchez to have selectively adjust brightness*** of the image 20 having voltage signal 11, a PWM, and a ramp signal 14 as taught by Dupont, because this would ***adjust independently the contrast and brightness without one effecting the other*** (col. 4, lines 42-43 of Dupont).

EX2010, 10.

Therefore, from the prosecution history and technical literature, a POSA would have understood "contrast" control to be different from the claimed "brightness" control of the '117 patent.

3. Ground 1 combination does not disclose or teach "a user [input] signal indicative of a user selectable brightness setting."

Petitioner contends that the "viewer selected *contrast* level" in Stoughton is the "user selectable *brightness* setting" in the challenged claims. Pet., 17. Petitioner alleges that the "user [input] signal" is "the signal output by BRM 24" in Stoughton because "this signal was based on and reflects the viewer selected contrast level information" and "is '**indicative of a user selectable brightness setting**.'" *Id*. (bolded in original). Petitioner's allegations that the output of the BRM in Stoughton is a "user [input] signal" is entirely premised on the "viewer

selected *contrast* level" being a "user selectable *brightness* setting." In other words, Petitioner's theory is based on its incorrect assertion that "contrast" is the same as "brightness."

Petitioner fails to identify a "user selectable brightness setting," as "viewer selected *contrast* level" in Stoughton is ***not*** a "brightness setting." As explained above, a POSA would have understood that "brightness" and "contrast" are different parameters controlled through different technical mechanisms. "Brightness is the overall, or average, intensity of illumination" and "depends on the amount of high voltage for the picture tube and its [DC] bias in the grid-cathode circuit." EX2004, 34. "Contrast," however, is the "difference in intensity between black parts and white parts of the reproduced picture" and is determined by the AC amplitude of the video signal. *Id.*, 34, 40; EX1003, 1:10-16, 1:50-53, 2:37-40.

Therefore, because "contrast" and "brightness" are separate and distinct parameters in CRT systems, Stoughton's "contrast level" is ***not*** a "user-selectable brightness setting" as recited in the challenged claims. Similarly, the BRM output "based on" the "viewer selected *contrast* level" is ***not*** the "user [input] signal indicative of a user selectable brightness setting" because, by Petitioner's admission, the BRM output is indicative of a "contrast level" and not a "brightness setting" as recited by the challenged claims. Pet., 17.

Alternatively, Petitioner argues in a single sentence that, if Stoughton does not disclose the "user selectable brightness setting," then "it would have been obvious in combination with Mierzwinski, that this viewer selected contrast level would also provide a 'user-selectable brightness setting.'"[3] *Id*. This obviousness argument fails. ***First***, because Petitioner cites no disclosures in Mierzwinski or provides any analysis as to how and why the "user selectable brightness setting" would have been obvious in view of Mierzwinski, Petitioner's argument is conclusory and fails to identify with particularity any evidence to support its obviousness argument. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition *identify 'with particularity' the 'evidence that supports the grounds* for the challenge to each claim.'") (quoting 35 U.S.C. § 312(a)(3)); *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) ("[T]he *Board 'must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to how or why the references would be combined to produce the claimed invention*.'") (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); *Samsung Elecs. Co. v. KAIST IP US LLC*, No. IPR2017-01046, Paper 14, 7 (P.T.A.B. Jan. 22,

[3] Petitioner makes no obvious argument based on Mierzwinski regarding "user [input] signal." Pet., 15-18.

2018) ("*Petitioner was required to identify the particular teachings of each reference* that it proposed to combine and *explain how and why* a POSA would have combined the teachings to produce the claimed invention.") (citing *TriVascular*, 812 F.3d at 1066); Pet., 15-18, 39-40. Because Petitioner does not cite a single teaching from Mierzwinski or provide any analysis as to how or why that teaching renders "user selectable brightness setting" obvious, Petitioner's obviousness theory fails.

Second, Mierzwinski *teaches away* from utilizing any user settings and thus cannot render a "user selectable brightness setting" obvious. Mierzwinski explains that, in the prior art, televisions had "manually operable controls by means of which a viewer may set the level of contrast, intensity, and chroma signal strength." EX1004, 1:22-25. To avoid the viewer having to adjust these controls, Mierzwinski discloses a completely automated system *without* any user settings. *Id.*, 1:35-40, 1:62-67. Petitioner does not identify any teachings regarding user settings in Mierzwinski.[4] Therefore, Mierzwinski cannot render a "user selectable brightness setting" obvious because it teaches against using any user selectable settings.

Therefore, the combination of Ground 1 fails to disclose or teach a "user

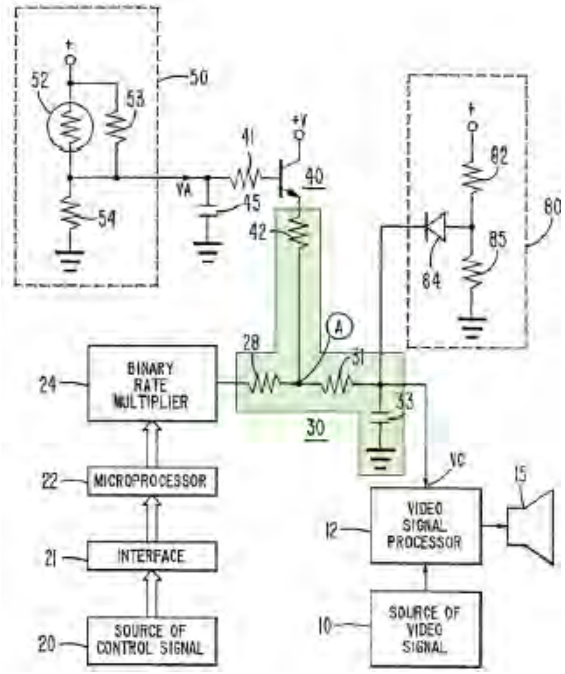
[4] If Petitioner intended to rely on any such disclosure, it had to be provided in the Petition. *Intelligent Bio-Sys.*, 821 F.3d at 1369; 35 U.S.C. § 312(a)(3)).

selectable brightness setting" and a "user [input] signal" as recited by the challenged claims.

B. Ground 1 does not disclose or teach the "multiplier" or "multiplying" limitations of claims 1 and 15.

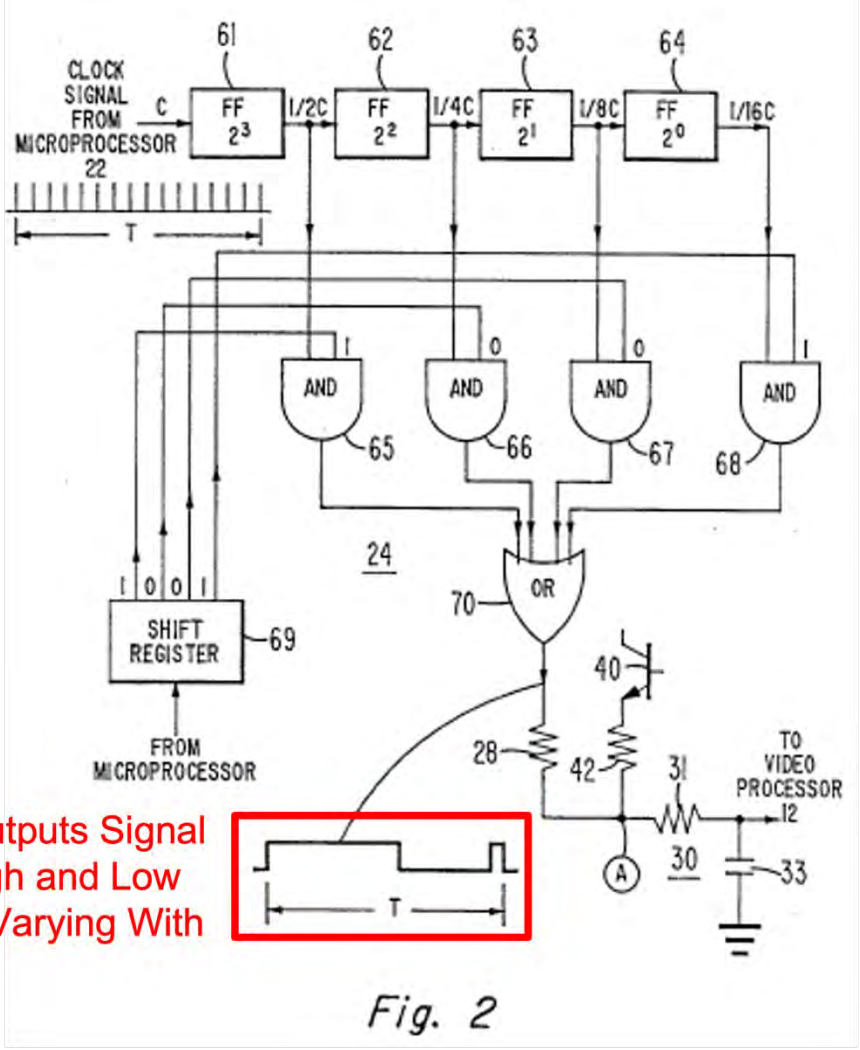
Claim 1 recites "a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal," and claim 15 recites "selectively multiplying the input signal with a sense signal to generate a combined signal" (collectively "multiplier limitations"). EX1001, 12:35-37, 14:1-2. Patent Owner requests that Board construe "multiplier" and "multiplying" to require multiplication as discussed in the Claim Construction section.

Stoughton does not disclose the multiplier limitations. ***First***, Stoughton does not disclose any multiplication. Rather, Stoughton discloses adding and integrating signals. Relying exclusively on Stoughton, Petitioner alleges that the circuitry in green below in Figure 1 is the "multiplier" of claim 1 and performs the "multiplying" of claim 15. Pet., 21-22, 39.



Pet., 22 (Petitioner's annotations).

However, the circuitry that Petitioner alleges is the "multiplier" does ***not*** perform any multiplication. The BRM of Stoughton outputs a pulsed signal, with high and low values, that vary with time as shown below.



EX1003, FIG. 2.

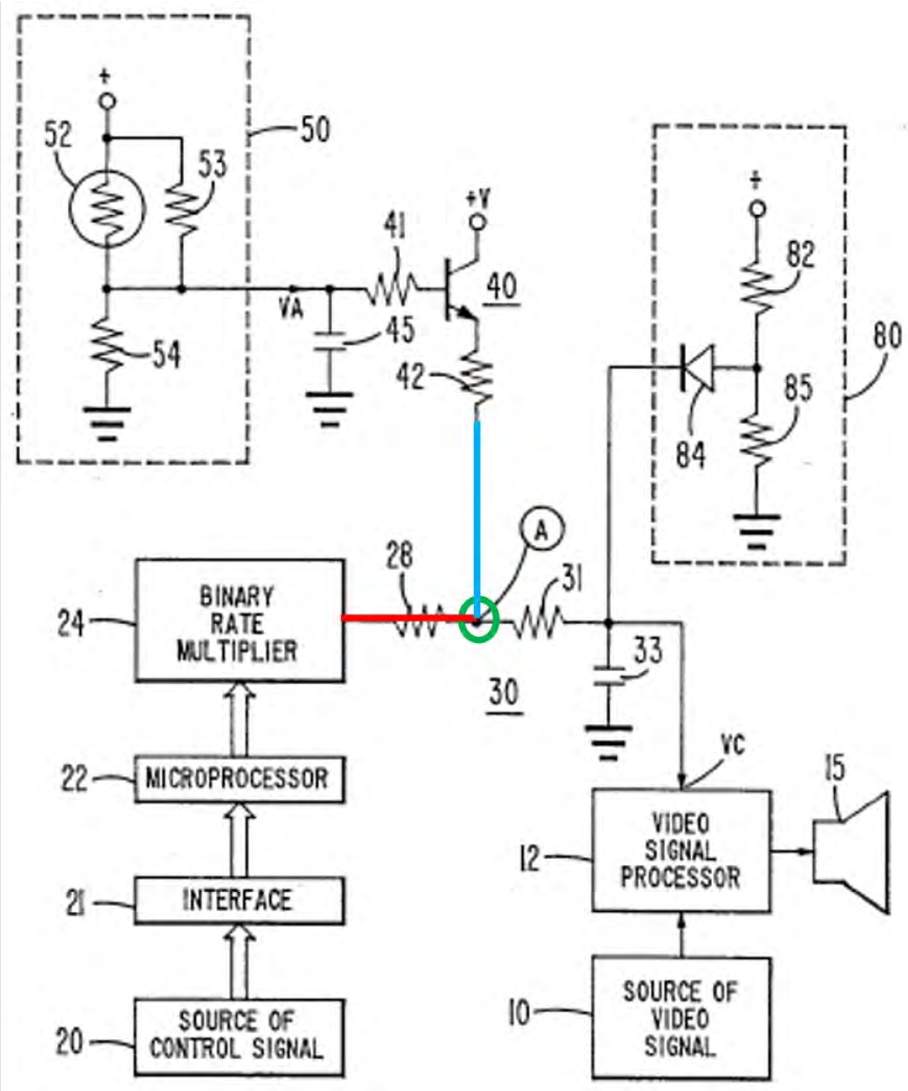
A BRM or a pulse width modulator generate *a pulse signal* in response to a digital word representing a control level.

The output signal from BRM 24 comprises substantially constant amplitude *pulses with a pulse width* (duty factor) determined by the contrast control information supplied from microprocessor 22.

Id., 1:42-44, 2:59-63.

Then, the pulsed signal with high and low values from the BRM (in red) is

added to the output of the alleged light sensor (in blue) at node A (in green). Therefore, at node A, the output of the alleged light sensor is added to the high or low value of the pulsed signal from the BRM depending on which one is present at a given moment in time resulting in different values at node A at different points in time.



EX1003, FIG. 1.

Stoughton states that resistor 31 and capacitor 33, referred to as circuit 30,

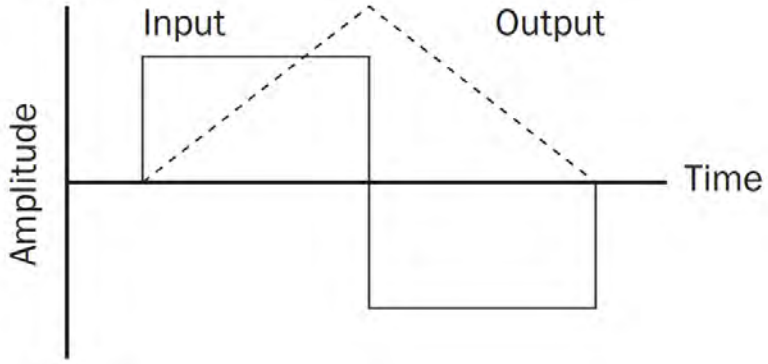
acts as an "integrator" that mathematically integrates the summed signals at node A over time.

> A binary output signal from BRM 24 is conveyed via a resistor 28 and ***an integrating or low pass filter network 30 including a resistor 31 and a filter capacitor 33***.
>
> The duty factor of the pulse signal produced by BRM 24 determines the DC voltage produced across capacitor 33 when the output pulse signal of BRM 24 is ***integrated by circuit 30***.
>
> The DC value of the signal at node A is recovered for contrast control purposes by means of ***integrator 30***.
>
> Thus for a given contrast control setting the binary output signal (e.g., 1001) of register 69 appears continuously and is ultimately converted to a corresponding DC contrast control voltage by ***integrator 30***.

Id., 2:57-59, 2:63-67, 4:16-18, 4:44-48.

An "integrator" circuit has a known meaning in the art. In electronics, an "integrator" is "a device producing an output proportional to the integral of one variable or of a sum of variables, with respect to another variable, usually time." EX2008 (IEEE Dictionary), 571. The 2002 Microsoft Computer Dictionary defines an integrator as a "circuit whose output represents the integral, with respect to time, of the input signal—that is, its total accumulated value over time."

integrator *n.* A circuit whose output represents the integral, with respect to time, of the input signal—that is, its total accumulated value over time. See the illustration. *Compare* differentiator.



EX2009, 278. Importantly, the ***definitions of "integrator" do not involve multiplication*** because integration is a different mathematical operation.

In Stoughton, because the BRM outputs a pulse signal (i.e., high and low varying with time), the sum of the voltages at node A will vary with time. EX1003, 2:54-3:2. As a result, integrating network 30, consisting of resistor 31 and capacitor 33, is designed to take the variable input voltages at node A and convert it to a DC voltage based on the rate of change (e.g., number of pulses per unit time).

> The ***pulse signal is filtered to produce a DC control signal***. . .
> A binary output signal from BRM 24 is conveyed via a resistor 28 and ***an integrating or low pass filter network 30 including a resistor 31 and a filter capacitor 33***. . . The ***duty factor of the pulse signal produced by BRM 24 determines the DC voltage produced across capacitor 33 when the output pulse signal of BRM 24 is integrated***

> ***by circuit 30***. This DC voltage is applied to a contrast control (gain control) input of video processor 12 to control the magnitude of the video signal, and thereby to control the contrast of a reproduced image.

Id., 1:42-49, 2:54-3:2.

Consistent with the definitions of "integrator," Stoughton never states that its circuitry performs any actual multiplication. Rather, Stoughton only states that its circuitry performs integration. *Id.*, 2:54-3:2, 4:18-21. Integration is ***not*** multiplication.

Petitioner erroneously attempts to imply there is multiplication where Stoughton states that the integration is "in accordance with" the following formula. Pet., 24. However, there is no disclosure in Stoughton that any circuitry actually performs multiplication.

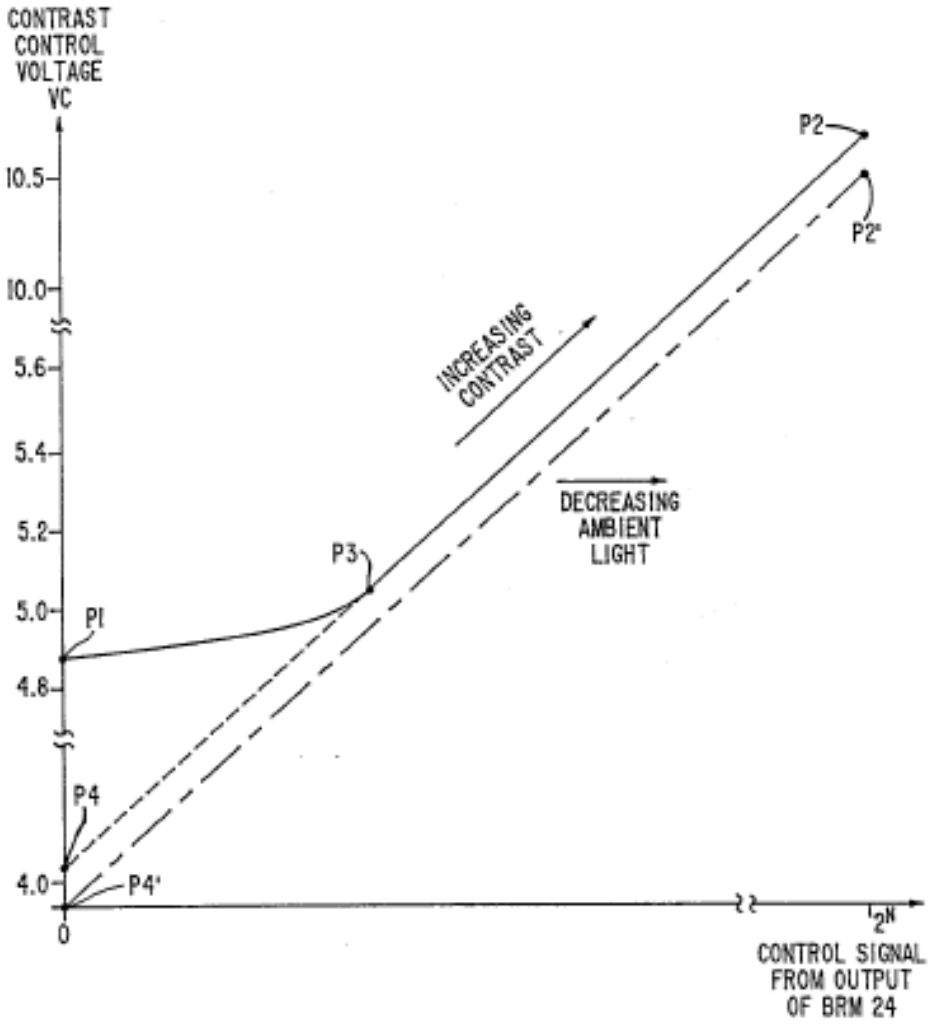
> The ***output signal of BRM 24, when integrated over time by circuit 30, provides a DC voltage*** across capacitor 33 ***in accordance with*** the expression
>
> $$\frac{N}{2^n} \times VP$$
>
> where "N" is the output number of the BRM (the number of ***pulses per unit of time***) . . . .

EX1003, 4:18-28. Rather, Stoughton merely states that the integration of the BRM

output (the alleged "user [input] signal") over time is proportional to the number of pulses per unit time output by BRM 24.

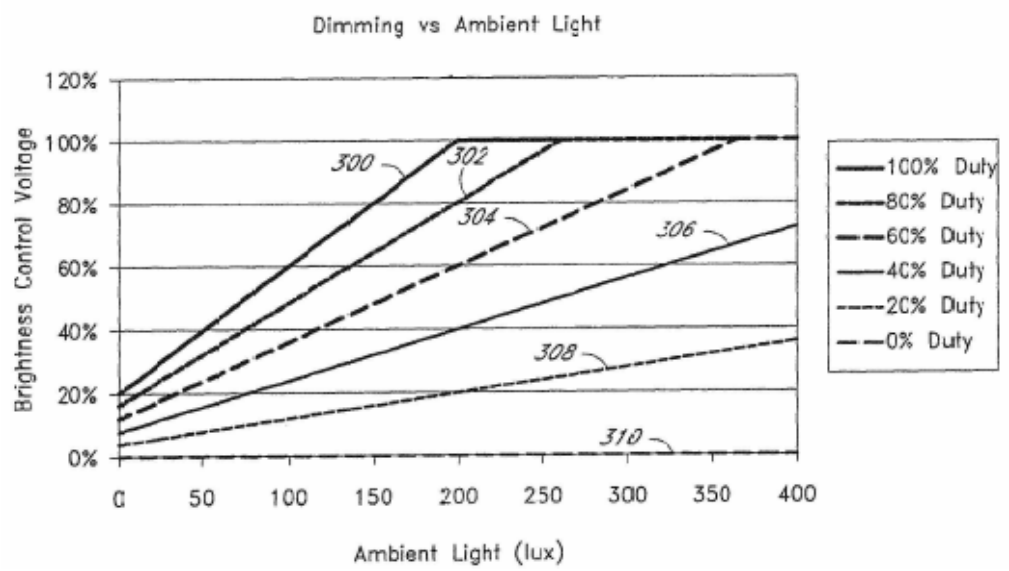
Figure 3 of Stoughton confirms there is no multiplication in the circuit of Figure 1 relied on by Petitioner. Figure 3 illustrates the integration over time of the sum of the alleged "user [input] signal" and "sensing signal." When ambient light changes (e.g., decreases) in Figure 3, the brightness line shifts to the right but remains ***parallel with the same slope***. The fact that the brightness lines remain parallel and have the same slope even though the ambient light (and thus the sensing signal) changes indicates that the alleged "user [input] signal" and "sensing signals" are added and ***not*** multiplied.

Figure 3 illustrates the control characteristic of the contrast control apparatus of Figure 1.



EX1003, FIG. 3, 2:32-33.

If Stoughton involved multiplication of the "user [input] signal" and "sensing signal," the slope of the line would change as the "user [input] signal" and "sensing signal" change as shown in Figure 3 of the '117 patent.



EX1001, FIG. 3.

Therefore, Stoughton discloses integration ***not*** multiplication. Stoughton thus fails to disclose the multiplier limitations of claims 1 and 15 because the system of Stoughton does ***not*** perform actual multiplication.

C. Ground 1 combination does not disclose or teach the "dark level bias" limitations of the challenged claims.

1. Petitioner fails to identify both a "combined signal" and a "brightness control signal" as recited by claims 1 and 15.

Petitioner fails to identify both a "combined signal" and a separate "brightness control signal." The language of claims 1 and 15 is unambiguous that the "combined signal" is adjusted by the "dark level bias" to generate a new signal, the "brightness control signal," with a different value than the "combined signal" (thus, "adjusted"). EX1001, claims 1, 15. Petitioner repeatedly argues that the *same* signal, the voltage across capacitor 33 (i.e., VC), is ***both*** the "combined

signal" and the "brightness control signal" as claimed.

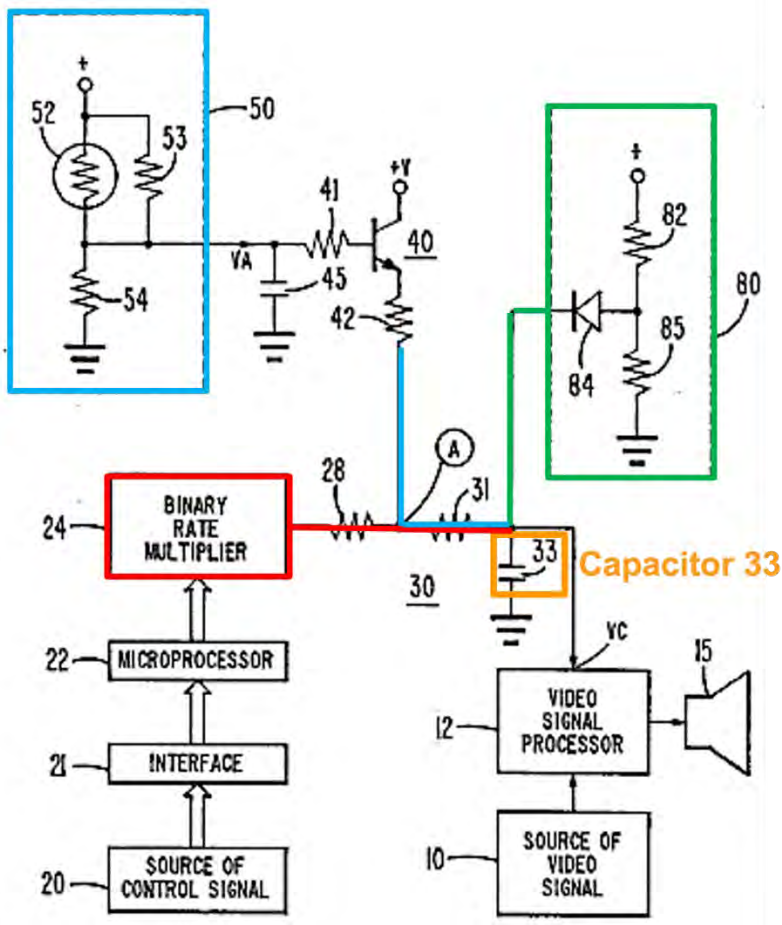
> The *claimed "brightness control signal"* in Stoughton *corresponds to voltage VC*. . .
>
> Accordingly, the output signal of Stoughton's limiter circuit 80 is "configured to adjust [i.e., increase] the *combined signal [i.e., the voltage VC across capacitor 33* based on multiplying the output of BRM 24 and the pull-up voltage at the emitter of transistor 40] to generate a *brightness control signal [i.e., the adjusted voltage VC across capacitor 33]* . . .
>
> The *"brightness control signal"* thus corresponds, as noted, to the *voltage VC across capacitor 33*, which is output to video signal processor 12 to control the display contrast.

Pet., 26, 31-32.

Petitioner's allegation that the "combined signal" and "brightness control signal" are the same structure, the voltage VC across capacitor 33, is contrary to Federal Circuit precedent, prior Board decisions, the claim language, and the specification of the '117 patent. ***First***, Petitioner's contention that the voltage VC across capacitor 33 is *both* the "combined signal" and the "brightness control signal" is contrary to established precedent and the Board's prior rulings, which require the "combined signal" and the "brightness control signal" to be separate structures since they are separately claimed elements. *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) ("Where a claim lists elements separately, 'the clear implication of the claim language' is that those

elements are 'distinct component[s]' of the patented invention.") (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004); *Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1404-05 (Fed. Cir. 1996)); *HTC Corp. v. Cellular Commc'ns Equip., LLC*, 701 F. App'x 978, 982 (Fed. Cir. 2017) ("The separate naming of two structures in the claim strongly implies that the named entities are not one and the same structure.") (internal citations omitted); EX2013, 13 ("We agree with Patent Owner that the 'combined signal' and 'brightness control signal' are different…"). Petitioner's failure to separately identify both a "combined signal" and a "brightness control signal" is thus fatal.

Petitioner further attempts to argue that the single voltage across a single capacitor 33 is multiple different signals (i.e., "combined" and "brightness control" signals) at the same time, which is simply not credible. Petitioner tries to break up the voltage across a single capacitor 33 into different signals by asserting that the "combined signal" is the "voltage VC across capacitor 33" based on the "output of BRM 24 and the pull-up voltage at the emitter of transistor 40" whereas the "brightness control signal" is the same "voltage VC across capacitor 33" after the output of limiter circuit. Pet., 31-32. However, the single voltage across capacitor 33 is always the result of *all* three voltages from the BRM, the pull-up voltage at the emitter of transistor 40, and the limiter circuit 80, which all lie upstream from capacitor 33.



EX1003, FIG. 1.

Petitioner's argument that the same voltage across a *single* capacitor 33 is sometimes a "combined signal" and sometimes an entirely different "brightness control signal" is not credible and does not make logical sense. The *same* voltage across the *same* capacitor 33 (i.e., VC) cannot be two different signals. At most, the voltage across a single capacitor 33 can only be one signal. Accordingly, Petitioner fails to identify both a "combined signal" and a separate "brightness control signal," which is fatal to Grounds 1 and 2.

2. Ground 1 combination does not disclose "a brightness control signal."

Petitioner fails to identify a "brightness control signal that is used to control a brightness level of a visible display" as recited by the challenged claims. Petitioner alleges that the voltage VC across capacitor 33 in Stoughton is the "brightness control signal." Pet., 26, 32. However, Stoughton states that the voltage VC across capacitor 33 is *only* used to change the amplitude of the video signal to control contrast, which does not change the brightness. EX1003, Abstract, FIG. 1, 1:10-16, 1:50-53, 2:37-40. Brightness is controlled by changing the DC bias applied to the grid cathode-circuit of the picture tube. EX2004, 34-35, 40; EX1008, 51, 58; EX2005, 15-11 (Figures).

Therefore, the voltage VC across capacitor 33 is incapable of being "used to control a brightness level of a visible display" because it does not affect the DC bias applied to the grid cathode-circuit of the picture tube. EX2004, 34-35, 40; EX1008, 51, 58; EX2005, 15-11 (Figures). Accordingly, Stoughton does not even mention "brightness" or the grid cathode-circuit. As a result, the voltage VC across capacitor 33 cannot be a "brightness control signal that is used to control a brightness level of a visible display" as recited by the challenged claims.

Petitioner's entire theory is based on the incorrect premise that "brightness" and "contrast" are the same. As explained above in Section IV.A.1, a POSA would have understood that "brightness" and "contrast" are different parameters that are

controlled through different technical mechanisms. "Brightness is the overall, or average, intensity of illumination," and it "depends on the amount of high voltage for the picture tube and its [DC] bias in the grid-cathode circuit." EX2004, 34. "Contrast," however, is the "difference in intensity between black parts and white parts of the reproduced picture" and is determined by the AC amplitude of the video signal. *Id.*, 34-35, 40; EX1003, 1:10-16, 1:50-53, 2:37-40.

Because "contrast" and "brightness" are distinct technical parameters in CRT systems, Stoughton's voltage VC across capacitor 33, which only changes the amplitude of the video signal to control contrast, is not "a brightness control signal that is used to control a brightness level of a visible display" because it does not affect the DC bias of the grid-cathode circuit and thus does not control brightness.

3. Ground 1 combination does not render obvious the use of voltage VC as a "brightness control signal."

Petitioner next contends in a *single* sentence without any citations to Mierzwinski that "it would have been obvious based on Stoughton alone, or in view of Mierzwinski, that voltage VC qualifies as a '**brightness control signal that is used to control a brightness of a visible display**.'" Pet., 32 (emphasis in original). Petitioner's argument is meritless. ***First***, because Petitioner cites no disclosures in Mierzwinski nor provides any analysis as to how and why the "brightness control signal" would have been obvious in view of Mierzwinski, Petitioner's argument is conclusory and fails to identify with particularity any

evidence to support its obviousness argument. *Intelligent Bio-Sys.*, 821 F.3d at 1369 (holding that petitioners must "adhere to the requirement that the initial petition *identify with particularity the evidence that supports the grounds* for the challenge to each claim.") (internal quotations omitted); *TriVascular*, 812 F.3d at 1066 ("*[T]he Board must still be careful not to allow hindsight reconstruction of references ... without any explanation as to how or why the references would be combined to produce the claimed invention*.") (internal quotations omitted); *Samsung*, No. IPR2017-01046, Paper 14 at 7 ("*Petitioner was required to identify the particular teachings of each reference* that it proposed to combine and *explain how and why* a POSA would have combined the teachings to produce the claimed invention.") (internal citations omitted).

Furthermore, Petitioner does not, and cannot, identify any disclosure in Mierzwsinki that teaches how to use a signal like voltage VC, which is configured to change the amplitude of a video signal, to adjust brightness, which requires a DC bias applied to grid-cathode circuitry of the picture tube. EX1003, Abstract, 1:10-16, 1:50-53, 2:37-40. Therefore, Petitioner's obviousness argument fails.

Second, there would have been no reasonable expectation of success if VC is used to control brightness. As Stoughton explains, voltage VC across capacitor 33 controls the amplitude of the video signal to control contrast. *Id.*, Abstract, 1:10-16, 1:50-53, 2:37-40. However, brightness is controlled by changing the DC

bias applied to the grid cathode-circuit of the picture tube and not by changing the amplitude of the video signal. *Id*. Stoughton never mentions "brightness" and lacks any teaching of how to change the DC bias applied to grid-cathode circuitry; and Petitioner does not propose using any teachings or circuitry from Mierzwinski. Therefore, because voltage VC is only configured to change the amplitude of the video signal, Stoughton's circuitry is not capable of performing the claimed function of "controlling brightness of a visual display." As a result, there would not have been a reasonable expectation of success in using the voltage VC across capacitor 33 to control brightness as Petitioner suggests.

D. There is no rationale to combine Stoughton with Mierzwinski.

Petitioner's rationale for combining Stoughton and Mierzwinski is conclusory and fraught with hindsight. A POSA would have had no rationale to combine Stoughton and Mierzwinski and would not have had a reasonable expectation of success in doing so.[5] ***First***, Stoughton and Mierzwinski are directed to fundamentally different purposes. Stoughton is directed to taking a user's manual contrast selection from a source 20 (e.g., knob or remote control) and ambient light information to control the contrast by adjusting the amplitude of the video signal.

[5] Nagai is only relied on for the "selectively" limitations. Pet., 9, 25.

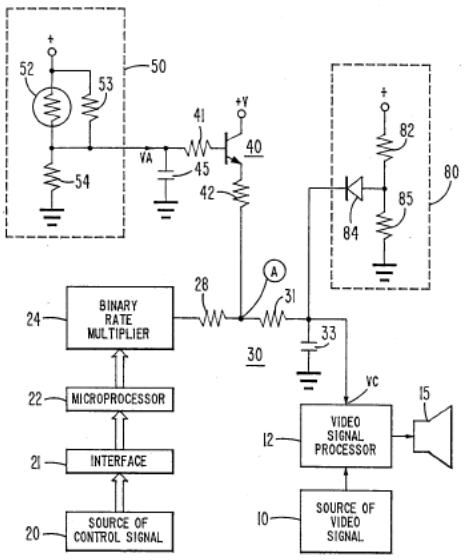


Fig. 1

EX1003, FIG. 1,

> The ***peak-to-peak amplitude of the video signal, and hence the contrast of a displayed image***, is ultimately ***controlled in response to a control signal from a source 20***. In this example source 20 constitutes part of a viewer operated remote control unit.

Id., 2:37-41. The output of Stoughton's circuit, VC, is thus designed only to adjust the amplitude of the video signal to control the contrast. *Id.,* Abstract, 1:10-16, 1:50-53, 2:37-41.

Whereas Stoughton is concerned with using a human user's selection of a contrast setting, Mierzwinski is focused on creating a fully automated system with *no manual input from a user*. EX1004, 1:12-44. Mierzwinski explains that, in the prior art, televisions had "manually operable controls by means of which a viewer may set the level of contrast, intensity, and chroma signal strength." *Id.*, 1:22-24.

To avoid the viewer having to adjust these controls, Mierzwinski's invention is a fully automated system to control luminance and chroma *without user inputs*. *Id.*, 1:35-40 ("It is accordingly an *object of the present invention* to provide an *automatic color saturation control* . . ."), 1:62-67 ("By using the teaching of *this invention*, other gain relationships between the luminance components and chroma signal . . . may be *automatically attained* . . ."), 5:34-36 ("*automatic control circuit of the present invention*").

Therefore, a POSA would not have combined Stoughton with Mierzwinski because they relate to fundamentally opposing purposes. Stoughton is concerned with how to utilize a user input contrast setting to control contrast. EX1003, FIG. 1, 1:10-16, 1:50-53, 2:37-41. Mierzwinski, however, is concerned with improving color saturation in a completely automated system *without* user input. EX1004, FIG. 4, 1:35-39, 3:3-7, 3:32-34, 5:38-40, 6:27-31. Because Stoughton's and Mierzwinski's systems control different parameters (i.e., contrast versus chroma/luminance, respectively) for different goals (i.e., controlling contrast based on user input versus improve color saturation automatically without user input, respectively), a POSA would not have been motivated to combine these references.

Second, Petitioner fails to explain how these references would be combined. "[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion

that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so." *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017). Petitioner does not propose incorporating any circuitry from Mierzwinski or rely on any teachings other than the generic assertion that it is desirable to control both brightness and contrast. Pet., 13-14.

Petitioner fails to provide any "evidence-supported account" of how the combination would work. Petitioner alleges that Stoughton's "video signal processor 12," which is a black box in Figure 1, would somehow be adapted to adjust brightness *without* any explanation of how that would be accomplished. There is no teaching in Stoughton, Mierzwinski, or Nagai of how to adapt a video signal processor designed to control contrast to control both contrast and brightness. In fact, Mierzwinski and Nagai do not even mention video signal processors. Further, Mierzwinski actually teaches away from using Stoughton's circuitry by teaching the use of different circuitry for controlling brightness that involves a different architecture without a video signal processor and with components such as an LED not found in Stoughton. EX1004, FIG. 2. Petitioner's conclusory assertion that Stoughton's video signal processor 12 will be adapted to do both contrast and brightness without any "evidence-supported account of the contemplated workings of the combination" is insufficient to provide motivation to combine. *Personal Web*, 848 F.3d at 994; *In re Magnum Oil Tools Int'l, Ltd.*, 829

F.3d 1364, 1380 (Fed. Cir. 2016) ("To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements.").

Further, Petitioner proposes that Stoughton would be adapted to have a single user input for both brightness and contrast. Pet., 13-14. However, this is contrary to Mierzwinski, which teaches a fully automated system not utilizing any user inputs. EX1004, 1:12-44. Petitioner does not explain how such a combined input would work in the context of Stoughton's mixed-signal circuitry. Pet., 13-14. Petitioner's conclusory assertion that a combined brightness/contrast user selection could be used in the circuitry of Stoughton without any "evidence-supported account of the contemplated workings of the combination" is plainly insufficient to provide a motivation to combine. *Personal Web*, 848 F.3d at 994; *Magnum*, 829 F.3d at 1380.

Third, a POSA would not have had a reasonable expectation of success. Petitioner alleges that, with a combined contrast/brightness user input, the video signal processor 12 would be adapted in some undisclosed way to adjust brightness and contrast. Pet., 13-14. Stoughton's circuitry is designed to carry out a single function, which is changing the amplitude of a video signal to control contrast. EX1003, FIG. 1, 2:37-41. The idea that this same circuitry without any significant modifications can control both contrast and brightness lacks credibility.

Petitioner provides no explanation of how the video signal processor, which

is designed to only change the amplitude of the AC video signal, would be adapted to use the single output of Stoughton's circuitry, VC, to control both the amplitude of the AC video signal for contrast and provide a DC bias to the grid-cathode circuitry, which is not even mentioned in Stoughton, to adjust brightness. None of the references teach any such modification to a video signal processor. Mierzwinski and Nagai do not even mention a video signal processor. Therefore, there is no teaching in any of the references on how to modify Stoughton's video signal processor to use a single analog voltage signal, like VC, to control both the brightness and contrast. EX2004, 34-35, 40; EX1008, 51, 58; EX2005, 15-11 (Figures); EX1003, Abstract, 1:10-16, 1:50-53, 2:37-40.

Without any teaching in any of the references and no explanation in the Petition of how this would be done, Petitioner fails to meet its burden of establishing that this combination would have been obvious and would have had a reasonable expectation of success. *Personal Web*, 848 F.3d at 994 ("[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.").

Fourth, Petitioner's argument that the circuits are similar in Stoughton and Mierzwinski is incorrect. Pet., 14. Stoughton's circuitry is designed to accept user

input whereas Mierzwinski's circuitry is automated without user settings. Further, Mierzwinski discloses analog circuitry whereas Stoughton has mixed signal circuitry, which includes a processor (with software), a digital bit-rate multiplier, and a digital-to-analog converter that is missing from Mierzwinski. EX1004, FIG. 2; EX1003, 1:30-49, 2:48-53, FIGs. 1-2. Moreover, the processing of the signals is significantly different—Stoughton's circuitry performs integration over time, whereas Mierzwinski does not perform any such manipulations. EX1003, 2:54-67, 4:16-21.

For these reasons, Petitioner fails to meet their burden of showing that a POSA would have had a rationale to combine these references.

V. THE COMBINATION OF GROUND 3 FAILS TO RENDER OBVIOUS ANY CHALLENGED CLAIM.

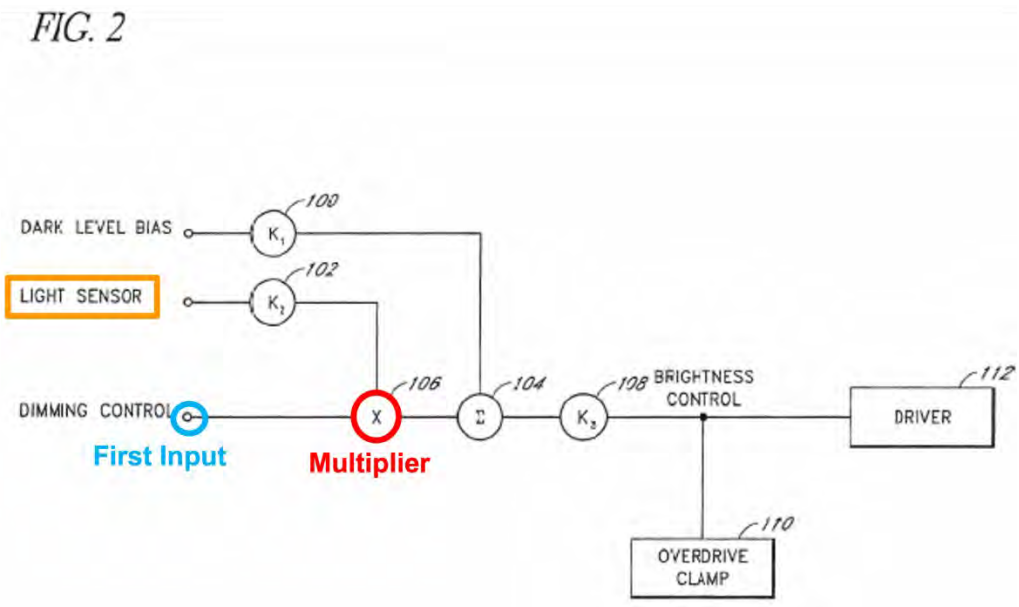
A. Contrary to Federal Circuit and Board precedent, Petitioner fails to separately identify the "first input," "light sensor," and "multiplier."

Under the plain claim language, there can be no dispute that the "first input," "light sensor," and "multiplier" are three separate and distinct claim elements. For example, claim 1 reads:

> 1. A brightness control circuit with selective ambient light correction comprising:
>
> ***a first input*** configured to receive a user signal indicative of a user selectable brightness setting;
>
> ***a light sensor*** configured to sense ambient light and to output a

> sensing signal indicative of the ambient light level;
>
> a ***multiplier*** configured to selectively generate a combined signal based on both the user signal and the sensing signal . . .

EX1001, claim 1. In addition to being claimed as separate structures, the specification describes the "first input," "light sensor," and "multiplier" as separate and distinct elements. For example, Figure 2 shows these as separate structures.



Id., FIG. 2.

Yet, despite the fact that "first input," "light sensor," and "multiplier" are *three* separately claimed elements, Petitioner improperly identifies the *same structure*, a generic microprocessor 310 with undisclosed "software" in Gettemy, as corresponding to *all three* of these distinct claim elements.

> The ***"first input"*** in Gettemy thus corresponds to ***main processor 310 and software functionality***, such as a software variable or routine, that receives the "user signal."

> Accordingly, the ***"light sensor"*** in Gettemy corresponds to light sensor 390, along with ***software executed by main processor 310*** that uses the output from light sensor 390 to determine the brightness range.
>
> The claimed ***"multiplier"*** thus would have corresponded to ***software executed by main processor 310*** for performing this computation.

Pet., 50, 53, 64.

Petitioner is ***not*** identifying a specific algorithm or pointing to any specific disclosure of software functionality. The word "software" does not even appear in Gettemy, much less any disclosure of an algorithm for performing these functions. Rather, Petitioner speculates that a general microprocessor and undisclosed software could theoretically have been made to perform the elements of the '117 patent's claims. This is improper hindsight that Petitioner is using to fill holes in the prior art because a general microprocessor and generic software could be alleged to do virtually any functionality in any patent.

Petitioner's allegations regarding Ground 3 are contrary to Federal Circuit precedent and the Board's prior rulings with regard to the '117 patent. ***First,*** Petitioner's allegations that the *same* main processor 310 and generic software corresponds to three different claim elements (i.e., "first input," "light sensor," and "multiplier") is contrary to established Federal Circuit precedent holding that separately claimed elements are distinct structures. *Becton*, 616 F.3d at 1254 ("Where a claim lists elements separately, the clear implication of the claim

language is that those elements are distinct component[s] of the patented invention.") (internal quotations omitted); *HTC*, 701 F. App'x at 982 ("The separate naming of two structures in the claim strongly implies that the named entities are not one and the same structure.") (internal citations omitted). Therefore, Petitioner's allegations are contrary to Federal Circuit precedent and must be rejected.

Second, consistent with Federal Circuit precedent, the Board has repeatedly denied institution when a petitioner asserts that a single structure in the prior art corresponds to multiple claim elements of the '117 patent as Petitioner does here. In IPR2020-00043, the Board denied institution holding that "[w]e agree with Patent Owner that Petitioner improperly relies on [reference's] minimum used luminance value 'a' as disclosing two separate claim limitations." EX2017, 20-25. In IPR2020-01283, the Board again denied institution where petitioner alleged that the same structure in the prior art was both the "user [input] signal" and the "dark level bias." EX2020, 19-25. The Board denied institution again in IPR2020-01337 holding that petitioner improperly relied on a single structure in the prior art as disclosing two different claim limitations. EX2023, 18-23. The Board should similarly deny institution here because Petitioner identifies a single alleged structure (i.e., main processor 310 and generic software) as corresponding to three separately claimed elements (i.e., "first input," "light sensor," and "multiplier").

Third, Petitioner's approach of relying on a generic processor and software to fill the holes in the prior art should be rejected. Unable to locate a "first input," Petitioner alleges that the "main processor 310" and "software" must comprise it. Pet., 50. The Petition then admits that "Petitioner has not mapped the 'sensing signal' of claim 1[b] to a raw sensor signal provided by ambient light sensors 390, as this information is not directly used to determine display brightness." Pet., 52. Because Petitioner admits that the output of light sensors 390 in Gettemy "is not directly used to determine display brightness," Petitioner identifies "main processor 310" and undisclosed "software" as comprising the "light sensor" in the challenged claims to encompass the two arbitrary screen brightness range values that are an output of the microprocessor not a light sensor, which is not a credible reading of Gettemy or the '117 patent. Pet., 20-21, 52. Because it is undisputed that Gettemy does not disclose any multiplication, Petitioner contends the black box of the "main processor 310" and undisclosed "software" must comprise the "multiplier." Pet., 64. Petitioner thus improperly alleges that "main processor 310" and generic "software" fill all the holes in the prior art.

Therefore, Petitioner's allegations for Ground 3, which are contrary to Federal Circuit and Board precedent, should be rejected; and the Board should deny institution.

B. Ground 3 combination does not disclose or teach "a user [input] signal indicative of a user selectable brightness setting."

1. Ground 3 fails to disclose a "user [input] signal indicative of a user selectable brightness setting."

Relying only on Gettemy, Petitioner alleges the following for the limitation "a user signal indicative of a user selectable brightness setting."

> Accordingly, the "**user signal indicative of a user selectable brightness setting**" corresponds in Gettemy to *the user selection*, represented as *the relative position of slider 430* within the currently-displayed range.

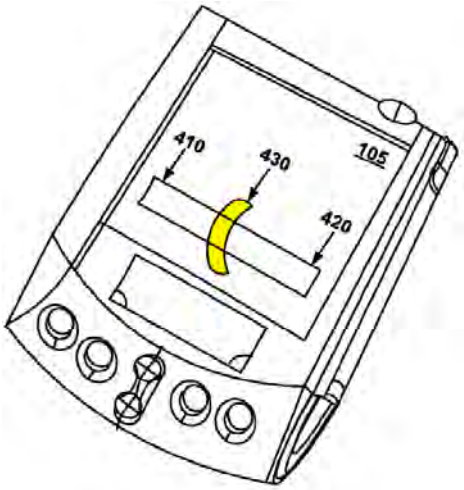


FIGURE 4

> Gettemy discloses and renders obvious "*receiving a user input signal indicative of a user selectable brightness setting*," i.e., the *user brightness selection represented*, as explained, *as the relative slider position* (e.g., as a percentage value).

Pet., 46, 76 (bolding in original, italics added); EX1013, Fig 4 (Petitioner's annotations). Petitioner does ***not*** separately identify the "user signal" and "user selectable brightness setting." Pet., 45-50. Rather, Petitioner identifies the "user

selection" of a "position of the slider 430" as ***both*** the "user [input] signal" and the "user selectable brightness setting."

Petitioner's allegations regarding the "user [input] signal" and the "user selective brightness setting" are contrary to Federal Circuit precedent, prior Board rulings, and the '117 patent. ***First***, Petitioner's assertion that a single structure, the "user selection" of "relative position of slider," corresponds to both the "user [input] signal" and "user selectable brightness setting," which are two separately claimed elements, is contrary to established Federal Circuit precedent and must be rejected. *Becton*, 616 F.3d at 1254 ("Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct component[s] of the patented invention.") (internal quotations omitted); *HTC*, 701 F. App'x at 982 ("The separate naming of two structures in the claim strongly implies that the named entities are not one and the same structure.") (internal citations omitted); Pet., 46, 76.

Second, the Board has repeatedly held in prior IPRs involving the '117 patent that one structure in the prior art cannot correspond to multiple claim elements. EX2017, 20 (denying institution holding that "We agree with Patent Owner that Petitioner improperly relies on [reference's] minimum used luminance value 'a' as disclosing two separate claim limitations."); EX2020, 19-25 (denying institution holding that Petitioner improperly alleged that the same structure in the

prior art was a "user [input] signal" and the "dark level bias"); EX2023, 18-23 (denying institution holding that Petitioner improperly relied on a single structure in the prior art as disclosing two different claim limitations). Petitioner's contention that the "user selection" of a "position of the slider 430" is ***both*** the "user [input] signal" and the "user selectable brightness setting" is thus contrary to both Federal Circuit and Board precedent.

Third, Petitioner's allegations are also contrary to the claim language and specification. Because the claims recite "a user [input] signal *indicative of* a user selectable brightness setting," the "user [input] signal" and "user selectable brightness setting" must be separate and distinct from each other as one has to be *indicative* of the other. Similarly, in the specification, the "user [input] signal" is a signal generated by the system such as a pulse width modulation ("PWM") signal or a digital word that can be based on, but is different from, the "user selectable brightness setting" as a user does not enter a PWM signal or binary word. EX1001, FIGs. 4, 9, 3:23-24, 6:28-31, 10:33-43, 12:30-31. Therefore, the "user selection" of the slider cannot simultaneously be both a "user [input] signal" and a "user selectable brightness setting" as Petitioner alleges since the claim language and specification are clear that these are separate and distinct elements.

Therefore, the Board should deny institution because Petitioner's obviousness theory is contrary to Federal Circuit precedent, prior Board decisions, the claim language, and the specification.

2. Petitioner fails to identify a "user [input] signal."

A "user selection, represented as the relative position of slider 430" cannot be a "user [input] signal" as Petitioner argues. Pet., 46, 76.

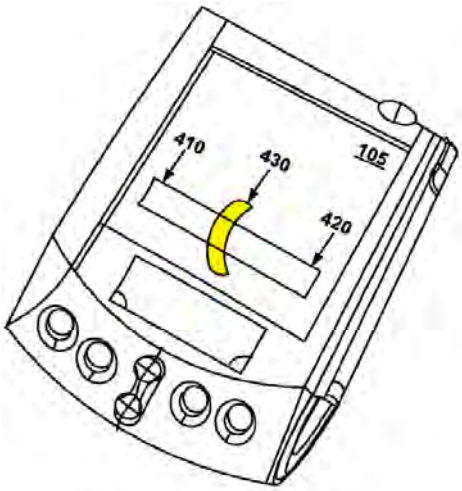


FIGURE 4

EX1013, FIG. 4 (Petitioner's annotations). The "user selection" is a *human* action on a user interface. A human action cannot be a "signal." While one could argue that the "user selection" on a slider bar on the user interface is a setting, it cannot be "signal."

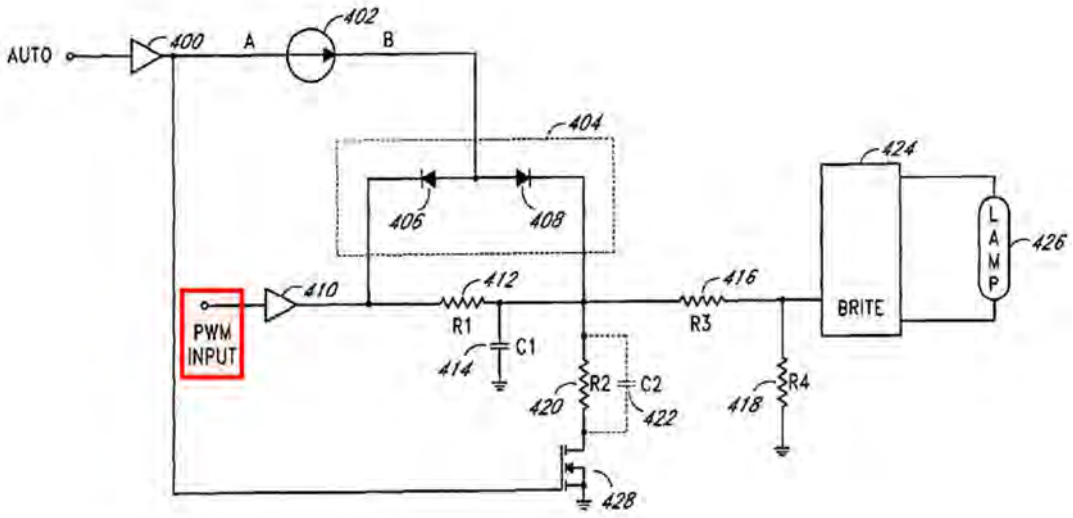
Petitioner's argument is contrary to the specification of the '117 patent, which describes the "user [input] signal" as a hardware or software signal that is generated by the system (e.g., a PWM signal or binary word). EX1001, FIG. 4,

3:23-24, 3:59-4:4, 4:35-37, 6:28-31, 10:33-43. The '117 patent draws a distinction between the "user [input] signal" and "user selectable brightness setting." The "user selectable brightness setting" is chosen by the user whereas the "user [input] signal" is a signal (*e.g.*, electrical or software) generated by the internal circuitry and/or software of the device. For example, in Figure 4, the user chooses a screen brightness setting. The microprocessor takes that information and generates a PWM signal, which is the "user [input] signal." That PWM user signal is generated by the microprocessor and is different than the "user selectable brightness setting."

> The ***PWM logic signal*** can be generated by a microprocessor ***based on user preference***.
>
> A ***microprocessor can generate the user adjustable PWM logic signal based on user input***...

Id., 3:23-24, 6:28-31.

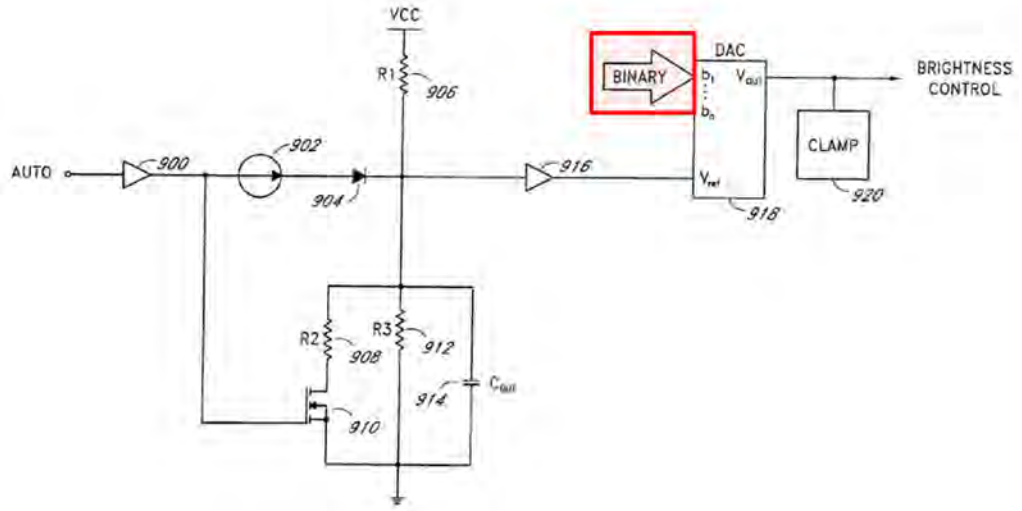
FIG. 4



EX1001, FIG. 4.

As another example, the "user [input] signal" in Figure 9 is a binary word, which is a series of 0s and 1s (*e.g.*, 00101110), that is generated by software. *Id.*, 3:59-4:4, 4:35-37, 10:33-43. A user does not enter or select a binary word. Rather, the binary word is a user signal generated by the system.

FIG. 9



EX1001, FIG. 9.

The "user [input] signal" is thus a hardware or software signal generated by the system. There is no support in the '117 patent for a "user [input] signal" being a "user selection, represented as the relative position of slider 430" as Petitioner contends because a "user selection" is not a hardware or software signal generated by the system. Pet., 46, 76. Accordingly, Petitioner fails to identify a "user [input] signal" for Ground 3.

Petitioner then argues that it is adopting the view that signals can be in software such that a "user selection, represented as the relative position of slider 430" is a software signal. Petition 46, 49-50. However, a human selecting a position on the slider bar is not a software signal and does not meet Patent Owner's

definition, or any other reasonable definition, of "signal." Petitioner does not identify a software variable or software structure that is allegedly the "user [input] signal" in Gettemy (or any other reference in Ground 3). In fact, Petitioner provides no analysis for how "user selection, represented as the relative position of slider 430" is a software signal except for the underlining of the word "symbols" in a quote from Gettemy. Pet., 46, 49-50. However, "symbol" is well understood in the art to refer to "[a] 16 bit unit of data accompanied by flag information." EX2008 (IEEE Dictionary), 1137. There is no evidence that the "user selection represented as the relative position of slider 430" is "[a] 16 bit unit of data accompanied by flag information."

Therefore, because the "user selection represented as the relative position of slider 430" is not a "user [input] signal," Petitioner fails to identify a "user [input] signal" for Ground 3.

C. Petitioner's contentions regarding "light sensor" and "sensing signal" are contrary to Gettemy's disclosure.

1. Petitioner's alleged "light sensor" is contrary to Gettemy's disclosure.

Petitioner's theory is that the "light sensor" in the challenged claims corresponds to the "light sensor 390," "main processor 310," and "software executed by main processor 310" is contrary to the claim language that recites the "sensing signal" is output by the light sensor. Pet., 53-54; EX1001, claim 1.

Importantly, Petitioner does not identify the actual "light sensor 390" in Gettemy, as the "light sensor" in the '117 patent's claims because, as Petitioner *admits*, the output signal of Gettemy's light sensor 390 is ***not*** used in determining the brightness as recited by the challenged claims (e.g., claim 1).[6] Pet., 52 ("*Petitioner has not mapped the 'sensing signal' of claim 1[b] to a raw sensor signal provided by ambient light sensors 390, as this information is not directly used to determine display brightness*.'"); EX1001, claim 1 ("a *light sensor configured to . . . output a sensing signal* . . . a multiplier configured to selectively generate a *combined signal based on* both the user signal and *the sensing signal*"). Petitioner alleges that the "brightness range" is the "sensing signal" but makes no attempt to explain how the "brightness range," a pair of values Petitioner admits is output by the processor and not light sensor 390 in Gettemy, meets the limitation "a light sensor configured to . . . output a sensing signal" in claim 1. Pet., 50-54.

Petitioner's assertion that the "sensing signal" comes from the "processor" rather than the light sensor 390 is also contrary to the '117 patent's disclosure, which is unambiguous that the "sensing signal" comes from the light sensor.

[6] While the '117 patent discloses "sensing signals" that involve scaling the signal output by the light sensor and using that scaled light sensor signal, the "sensing signal" is always derived from the output of the light sensor. *See, e.g.,* EX1001, FIGs. 1-2, 4:45-61, 5:15-29, 7:3-35, 11:3-15.

> In one embodiment, a brightness control circuit with ambient light correction includes ***a visible light sensor that outputs a sensor current signal*** in proportion to the level of ambient light . . . and a multiplier circuit that generates a brightness control signal based on a mathematical product of the ***sensor current signal*** and the dimming control input.
>
> A user input (DIMMING CONTROL) is multiplied by a sum of a dark level bias (DARK LEVEL BIAS) and ***a light sensor output*** (LIGHT SENSOR) to produce a brightness control signal (BRIGHTNESS CONTROL) for a display driver 112.
>
> A visible ***light sensor detects the ambient light level and generates the corresponding light sensor output***.

EX1001, 2:36-43, 4:48-52, 5:5-7.

Further, since it is undisputed that the output of light sensor 390 in Gettemy is ***not*** used in determining brightness, Petitioner uses a tortured reading of Gettemy to include the microprocessor 310 and undisclosed software in the "light sensor" that contradicts the express disclosure of Gettemy, which distinguishes the microprocessor from the light sensor as separate components demonstrating that the processor is ***not*** part of the "light sensor" in Gettemy.

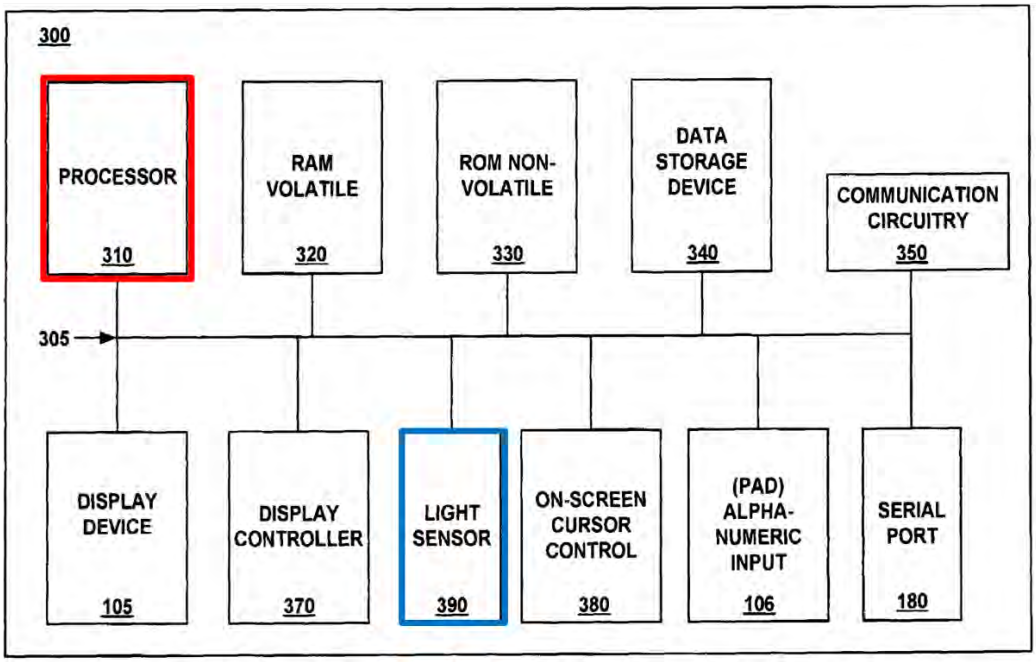


FIGURE 3

EX1013, FIG. 3.

A portable computer system or electronic device which includes a lighted display device with dynamically adjustable range settings, ***a processor***, a ***light sensor*** and a display controller is disclosed. In one embodiment, the ***processor*** implements the adjustment for the range settings based on prestored range configuration data and an ambient light information signal from the ***light sensor***.

In one embodiment, portable computer system 300 includes one or more ***light sensors 390*** to detect the ambient light and provide a signal to the ***main processor 310*** for determining when to implement a change in brightness range.

In step 610 one or more ***light sensors*** detect the ambient light and send a signal representing this information to the ***processor***.

> c. A portable computer system comprising:
>
> ***a processor*** coupled to a bus;
>
> ***a light sensor*** coupled to said bus and for providing an ambient light information signal to said processor . . .

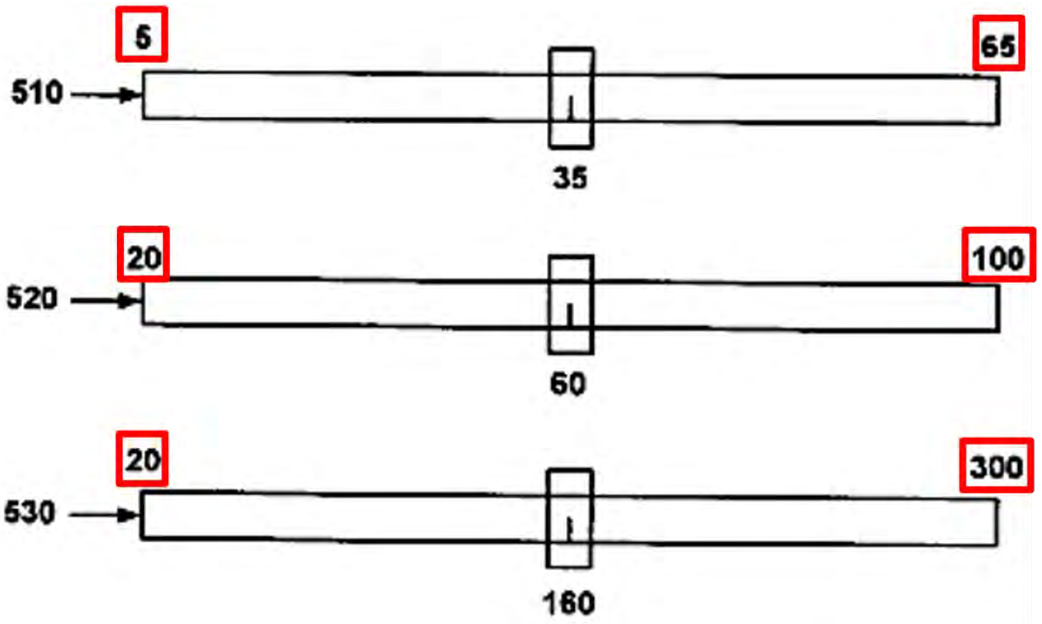
Id., 2:38-57, 5:31-35, 5:56-68, 6:52-56, claim 1. Petitioner even admits that processor 310 is a distinct component from light sensor 390. Pet., 44 ("The key components of portable computer 300 include processor 310, light sensor 390 . . . .").

Petitioner's theory reads "light sensor configured to . . . output a sensing signal" out of claim 1. Petitioner admits that the output of the actual light sensor 390 in Gettemy is not directly used in determining the brightness. Pet., 50, 52. As a workaround, Petitioner includes the main processor and software in the alleged "light sensor" to encompass the "brightness range," which Petitioner admits is selected by the processor and ***not*** output by a light sensor. *Id*. Petitioner's theory would thus read "light sensor configured to . . . output a sensing signal" out of the claims and should be rejected by the Board.

Therefore, Petitioner's allegations regarding the "light sensor" should be rejected.

2. Petitioner's contentions regarding "sensing signal indicative of the ambient light level" are contrary to Gettemy's disclosure.

Petitioner contends that the "sensing signal" in claim 1 and "sense signal" in claim 15 (collectively "sensing signal") is a "brightness range" consisting of two arbitrary numbers (e.g., 5 and 65, 20 and 100) programmed into software and selected by the processor. Pet., 50-52.



EX1013, FIG. 5.

Petitioner's allegation that the "sensing signal" is a "brightness range" is contrary to the disclosure of the '117 patent. While the '117 patent discloses "sensing signals" that involve scaling the signal output by the light sensor and using that scaled light sensor signal, the "sensing signal" is derived from the value of a single signal output of the light sensor. *See, e.g.*, EX1001, FIGs. 1-2, 4:45-61, 5:15-29, 7:3-35, 11:3-15.

FIG. 1

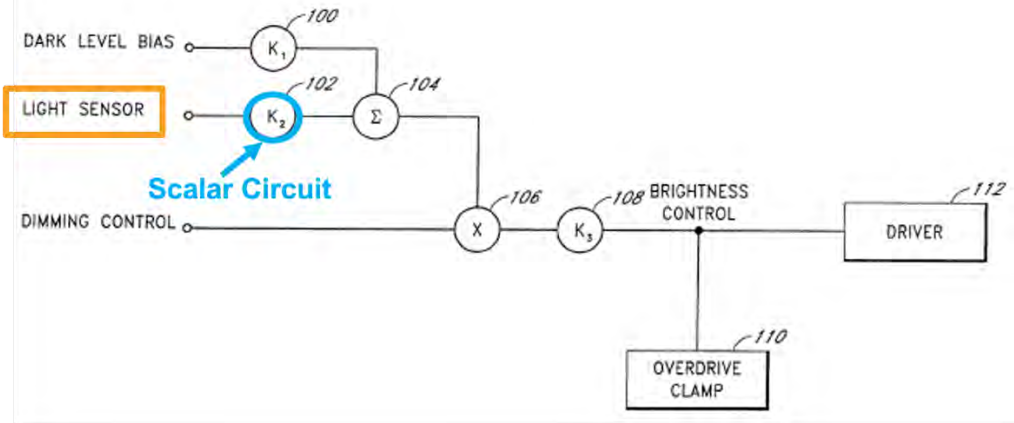
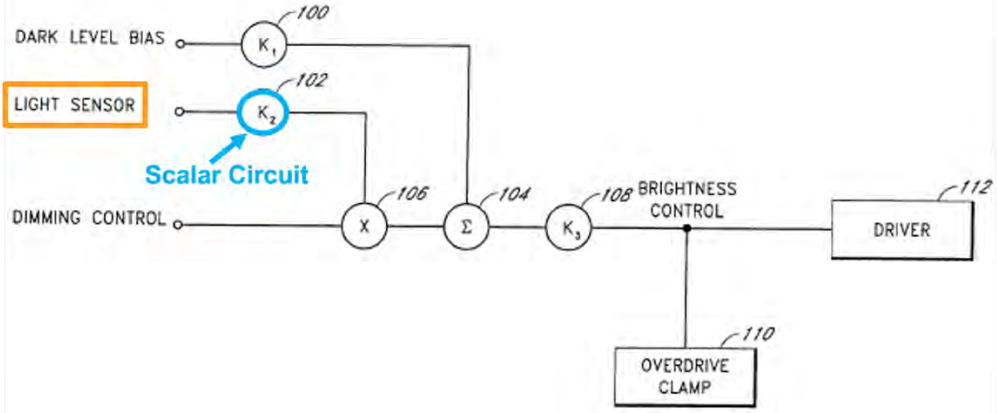


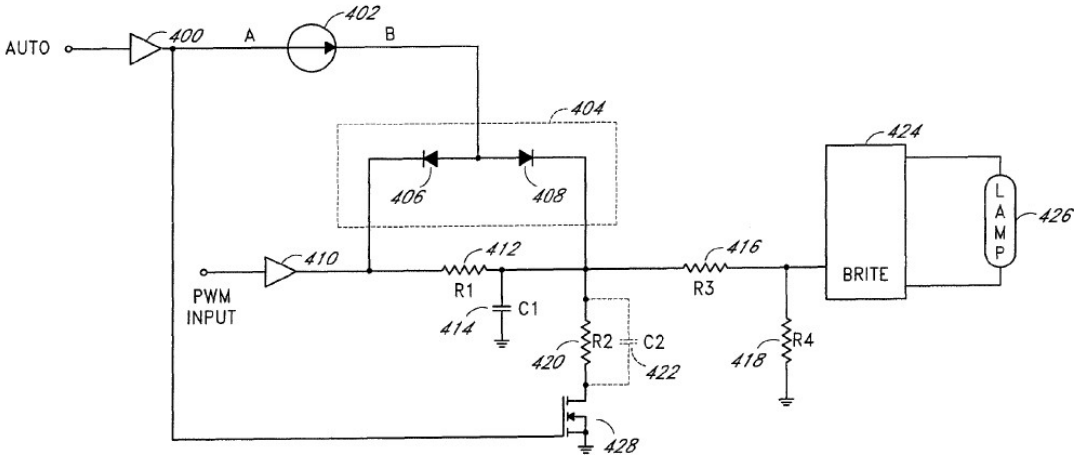
FIG. 2



EX1013, FIGs. 1-2.

The equations for the embodiments of Figures 4, 8, and 9 similarly show the "sensing signal," ISRC, as a single value that is output from the light sensor.

FIG. 4



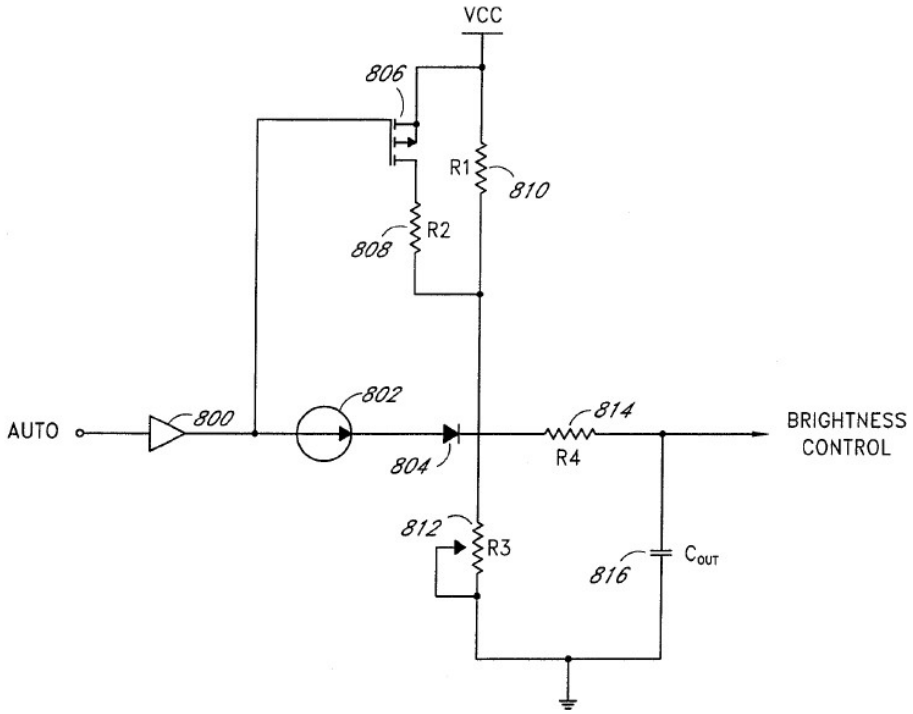
User Signal **Dark Level Bias**

$$BCS1 = dutycycle \times \left[\left(\frac{VCC \times R2 \times R4}{[(R1+R2)\times(R3+R4)]+(R1\times R2)}\right)+\left(\frac{ISRC \times R1 \times R2 \times R4}{[(R1+R2)\times(R3+R4)]+(R1\times R2)}\right)\right]$$

Sensing Signal

The term "dutycycle" corresponds to the duty cycle of the user adjustable PWM logic signal...***The term "ISRC" corresponds to the sensor current signal***.

FIG. 8



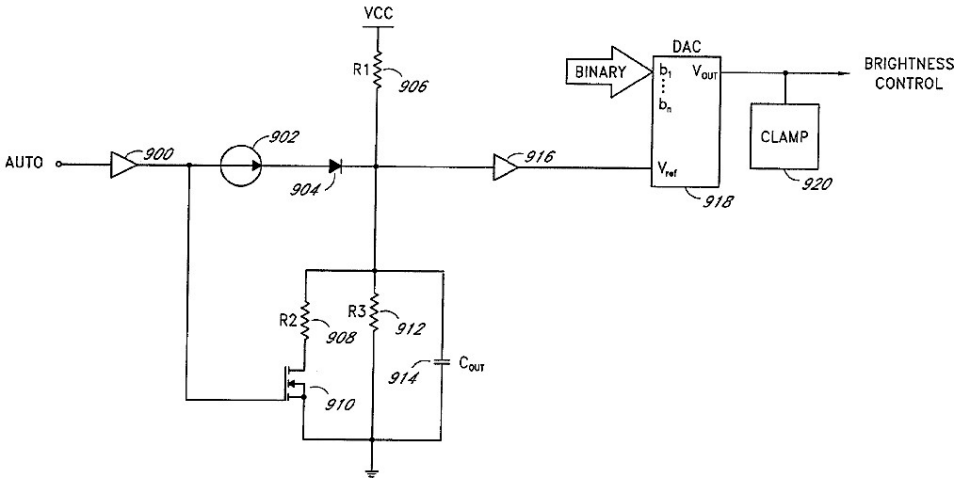
$$BCS3 = \left[VCC \times \frac{R3}{(R1 + R3)} \right] + \left[ISRC \times \frac{(R1 \times R3)}{(R1 + R3)} \right]$$

Dark Level Bias

Sensing Signal

User Signal

FIG. 9



$$BCS5 = \underbrace{\text{binary \% fullscale}}_{\text{User Signal}} \times \left[\left(\frac{\underbrace{[VCC \times (R2 \times R3)]}_{\text{Dark Level Bias}} + [\underbrace{ISRC}_{\text{Sensing Signal}} \times R1 \times R2 \times R3]}{(R1 \times R2) + (R1 \times R3) + (R2 \times R3)}\right)\right]$$

EX1013, FIGs. 4, 8, 9, 7:17-29, 10:9-12, 11:10-15.

The '117 patent contains no support for Petitioner's contention that the "sensing signal" can be a "brightness range" of two arbitrary values selected by a processor. In every embodiment of the '117 patent, the "sensing signal" is a single value, whether scaled or not, that is output from the light sensor. *Id.*, FIGs. 1, 2, 4, 8, 9, 7:17-29, 10:9-12, 11:10-15. This is also reflected in the claim language. For instance, claim 1 recites "a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level."

However, contrary to the claim language and specification of the '117 patent, which recite that the "sensing signal" involves a *single* value that is output

by the light sensor, Petitioner alleges that the "sensing signal" is a "brightness range" of two arbitrary values that Petitioner admits are selected by the main processor and *not* output by an actual light sensor. Pet., 50, 52. Petitioner's allegations regarding "sensing signal" would read out the "light sensor configured to . . . output a sensing signal" language of claim 1 and the "sense signal indicative of an ambient light level" language of claim 15. Therefore, Petitioner fails to show that the combination of Ground 3 discloses a "sensing signal" because the "brightness range" of Gettemy is not a "sensing signal" as recited by the challenged claims.

D. Ground 3 does not disclose the multiplier limitations.

1. Gettemy, Kerman, and Rosenzweig fail to disclose or render obvious a "multiplier" or "multiplying" as recited in independent claims 1 and 15.

The combination of Gettemy, Kerman, and Rosenzweig does not render obvious the "multiplier" and "multiplying" limitations of claims 1 and 15 (collectively "multiplier limitations") as Petitioner contends. Petitioner does not dispute that Gettemy does not disclose multiplication. Pet., 56-57. Petitioner further admits that Gettemy contains no disclosure as to how the software makes brightness adjustments. *Id.*, 56 ("Gettemy does not disclose precise details about how main processor 310 increases or decreases the brightness value associated with the relative slider position in response to a change in the brightness range.").

Neither Kerman nor Rosenzweig disclose the multiplication of any signals or the use of multiplication to determine screen brightness.

Given that there is no disclosure in any of these references of using a multiplier or multiplying signals to determine the brightness of a display, Petitioner and its expert simply make up an equation for brightness control of a display that is not disclosed in any reference. *Id.*, 59-61; EX1002, ¶¶305-307. As discussed above, Petitioner admits that Gettemy does not disclose multiplication or how to determine brightness; and Rosenzweig and Kerman have no disclosure of multiplying different signals or brightness control. Therefore, Petitioner is not actually combining the teachings of the references together. Instead, Petitioner is using improper hindsight and speculation to try to recreate the claims of the '117 patent. Accordingly, Petitioner's hindsight-based obviousness arguments should be rejected.

The proposed combination of Gettemy, Kerman, and Rosenzweig for this element would not result in a system that meets the multiplier limitations. ***First***, this combination would not perform multiplication with a "sensing signal" or generate a "combined signal" based on a "sensing signal." As explained in Section V.C, the "brightness range" is not a "sensing signal" as Petitioner contends because the "brightness range" is two arbitrary values chosen by a programmer and not output by a light sensor. ***Second***, this combination would not perform

multiplication with a "user [input] signal" or generate a "combined signal" based on a "user [input] signal." As explained in Section V.B, Petitioner fails to identify a "user [input] signal" that is distinct from the "user selectable brightness setting."

Therefore, Petitioner's theory relies on improper hindsight alleging an equation for brightness control that is not taught in any reference. Moreover, the combination would not result in the challenged claims. The Board should thus deny institution.

2. There is no rationale to combine Gettemy with Kerman and Rosenzweig.

There is no rationale to combine Gettemy with Kerman and Rosenzweig for controlling brightness of a display. As Petitioner admits, neither Kerman nor Rosenzweig relate to controlling brightness of a display. Pet., 57, 61. Rather, Kerman and Rosenzweig are programming manuals that generally describe slider bars. EX1014; EX1015. Petitioner provides only a hindsight-motivated analysis that looks to the slider bars of Kerman and Rosenzweig for the sole purpose of taking an equation from Kerman and Rosenzweig intended to determine the manual input on a slider bar and repurpose it, with hindsight, into a brightness control algorithm. Pet., 56-64; EX1014, 39-41, 47; EX1015, 44-50.

The fact that Gettemy contains no disclosure as to how brightness adjustments are made, as Petitioner admits, should not serve as a license to import any algorithms *unrelated* to brightness control from cherry-picked references in

programming languages not relevant to Gettemy's handheld devices. Pet., 56 ("Gettemy does not disclose precise details about how main processor 310 increases or decreases the brightness value associated with the relative slider position in response to a change in the brightness range."). This is plainly hindsight. The Board should thus deny institution because there is no rationale to combine Gettemy with Kerman and Rosenzweig for the multiplier limitations.

E. Ground 3 fails to disclose or teach the "dark level bias" limitation.

1. There is no rationale to combine Gettemy with Bell and Whitted.

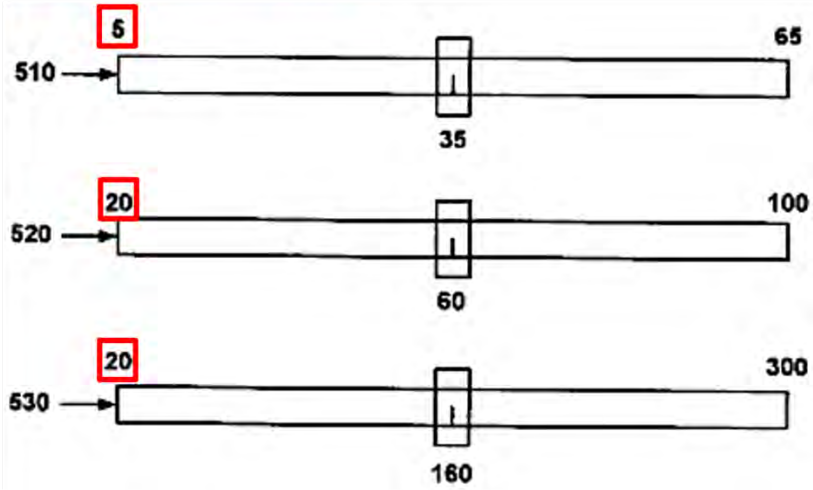
Petitioner admits that "Gettemy does not appear to disclose a 'dark level bias.'" Pet., 66. Petitioner proposes combining Gettemy with Bell and Whitted to satisfy the "dark level bias" limitations. Petitioner does not rely on any technical teachings of Bell or Whitted. *Id.*, 70. Rather, Petitioner merely "relies on them only for general teachings about maintaining the brightness level above a predetermined minimum threshold value, and the reasons to do so." *Id*. Petitioner alleges the motivation to combine as follows:

> This motivation is expressly stated in Whitted, explaining that "[a] ***minimum power level is set***, e.g., ***pre-programmed***, for the backlight 510 ***to insure that the display will be readable in low light conditions***." (Whitted, 8:22-25.) This motivation is also echoed throughout Bell.

Id., 71.

A POSA would have no motivation to combine Gettemy with Bell or Whitted because the combination would be redundant and provide no technical benefits. Petitioner argues that motivation to combine is based on the need for a pre-programmed minimum power level. Pet., 71. There can be no reasonable dispute that Gettemy already has a minimum power level that is pre-programmed and stored in memory in the form of the minimum value of the brightness range as shown below in red.

Brightness Range Minimum Value



EX1013, FIG. 5.

In one embodiment, the processor implements the adjustment for the range settings based on ***prestored range configuration data*** and an ambient light information signal from the light sensor.

The processor then, as shown in step **620**, accesses ***stored data which configures the ranges*** and determines if the ambient light signal requires a change to the ***brightness range***.

1. A portable computer system comprising: . . .

> a data storage device coupled to said bus and comprising preconfigured dynamically adjustable ***brightness range*** setting data for implementing a plurality of different simultaneously ***stored ranges***, wherein ***each stored range*** of said plurality of stored ranges ***comprises*** a brightness range maximum value and ***a brightness range minimum value***; . . .
>
> 10. A portable electronic device comprising: . . .
>
> a data storage device coupled to said bus and comprising a plurality of simultaneously stored preconfigured dynamically adjustable ***brightness ranges***, wherein ***each stored range*** of said plurality of stored ranges ***comprises*** a brightness range maximum value and ***a brightness range minimum value***; . . .
>
> 19. In a portable electronic device, a method of responding to a change in ambient light conditions comprising: . . .
>
> c) implementing said brightness range to alter the brightness of a display device of said portable electronic device, wherein ***each stored brightness range*** of said plurality of stored brightness ranges ***comprises*** a brightness range maximum value and ***a brightness range minimum value***; . . .

Id., 2:41-44, 5:60-63, 6:52:67, 7:36-48, 8:27- 41, Claims 1, 10, 19.

There is also no dispute that the **minimum values of the brightness ranges set an absolute minimum brightness level as even Petitioner admits** that "the sliders in Gettemy do not permit the user to move the slider below the minimum value of the applicable range (*e.g.* '5' for the '*dark or dimly lit*' range in Figure 5)." Pet., 66 (italics in original). Furthermore, Gettemy expressly considers the

brightness ranges, which all have a minimum value, to be perfectly adequate for a "dark" environment when the ambient light is approximately zero. For example, regarding Figure 5 shown above, Gettemy states "***[r]ange 510 may be used when in a dark or dimly lit environment***" making it clear that the minimum brightness value in range 510 is sufficient for "dark" environments. EX1013, 5:50-51.

Therefore, because Gettemy discloses a minimum brightness level in its brightness range, a POSA would have no motivation to add a second minimum brightness level from either Bell or Whitted. That would add complexity and be redundant without providing any technical benefits. *South-Tek Sys., LLC v. Engineered Corrosion Sols., LLC*, 748 F. App'x 1003, 1006 (Fed. Cir. 2018) (affirming holding that a POSA would not be motivated to combine references, in part, to add a feature already present in the first reference because such a combination would be redundant); *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1331-32 (Fed. Cir. 2019) (affirming no motivation to combine when combination adds complexity and potential disadvantages that outweighed any benefits); *Ex Parte James Pinon*, No. APPEAL 2017-005566, 2018 WL 1287471, at *3-4 (P.T.A.B. Mar. 9, 2018) (finding no motivation to combine references where the combination added a coupling structure to a device already securing components with screws because primary reference's screws already provided

sufficient support and secondary reference's coupling structure would be redundant).

Petitioner then hypothesizes that the minimum brightness levels in Gettemy "could" be insufficient. Pet., 71-72. There is no evidence to support this speculation. Using conjecture to conjure a hindsight justification, Petitioner makes allegations about degradation of displays, which is an issue *not* raised in any of the references. Regardless, this justification makes little sense as it is actually contrary to the references' teachings. Gettemy expressly teaches that the brightness ranges are set to "***maximize readability in various ambient lighting conditions*** and to ***prolong the lifetime of the display***, the light and the battery." EX1013, 1:10-15. Gettemy further states that its brightness ranges maximize visibility and are suitable "when in a dark or dimly lit environment," which would encompass an ambient light of approximately zero. *Id.*, 5:50-51. Therefore, Gettemy teaches setting the minimum brightness of the brightness range to a value that maximizes visibility even in a "dark or dimly lit environment" thereby ensuring visibility in ambient darkness obviating the need for a second minimum brightness level. *Id*.

Finally, Petitioner's proposed combination is not one where the alleged combined signal would go to zero if the sensing signal went to zero. Since Petitioner's alleged "sensing signal" is a brightness range consisting of a predetermined maximum and minimum brightness values stored in memory to

"maximize readability in various ambient lighting conditions," the sensing signal can never go to zero even when the ambient light in the room is approximately zero because, as Petitioner admits, "the sliders in Gettemy do not permit the user to move the slider below the minimum value of the applicable range." *Id.*, 1:10-15; Pet., 66. Further, because the maximum and minimum values (i.e., the alleged "sensing signal") will always be a positive brightness value, Petitioner's alleged multiplier will indisputably always produce a brightness value equal to or greater than the minimum brightness of the brightness range.

> [display brightness value] = min [low range setting] + ((max [high range setting] – min [low range setting]) × (percent [relative slider position] ÷ 100)).

Pet., 60.

Therefore, there is no need to add the minimum brightness thresholds from Bell or Whitted since the brightness will always be maintained above the minimum brightness of Gettemy's brightness range. *South-Tek*, 748 F. App'x at 1006 (affirming no motivation to combine to add a redundant feature); *Henny Penny*, 938 F.3d at 1331-32 (affirming no motivation to combine when combination adds complexity and potential disadvantages that outweighed any benefits); *Ex Parte Pinon*, 2018 WL 1287471, at *3-4 (finding no motivation to combine references where the combination added a coupling structure to a device already securing components with screws because primary reference's screws already provided

sufficient support and secondary reference's coupling structure would be redundant). Ground 3 should thus be rejected, and institution denied.

2. The combination of Gettemy with Whitted and Bell would not have yielded the "dark level bias" limitations.

The combination of Gettemy, which Petitioner admits does not disclose a "dark level bias," with Whitted and Bell would not have resulted in the limitations "dark level bias configured to adjust the combined signal to generate a brightness control signal" of claim 1 and "adjusting the combined signal with a dark level bias to generate a brightness control signal" of claim 15. Pet., 76. Whitted discloses a "minimum power level" that is "pre-programmed, for the backlight," and Bell discloses "a minimum" brightness in the context of a system where all brightness values are derived by indexing the ambient light value in a pre-programmed look-up table. EX1016, 8:23-25; EX1017, FIGs. 1, 6, Abstract, 3:26-33, 4:27-36, 5:17-25, 6:3-5, 6:22-33.

However, the threshold minimum brightness levels in Whitted and Bell are not a "dark level bias." The '117 patent teaches that the "dark level bias" is not a minimum threshold. For example, as shown in the equations for the preferred embodiments of Figures 4 (BCS1), 8 (BCS3), and 9 (BCA5), the "dark level bias" is a bias that mathematically adjusts the combined signal.

User Signal — Dark Level Bias

$$BCS1 = dutycycle \times \left[\left(\frac{VCC \times R2 \times R4}{[(R1+R2)\times(R3+R4)]+(R1\times R2)}\right) + \left(\frac{ISRC \times R1 \times R2 \times R4}{[(R1+R2)\times(R3+R4)]+(R1\times R2)}\right)\right]$$

Sensing Signal

Dark Level Bias — Sensing Signal — User Signal

$$BCS3 = \left[VCC \times \frac{R3}{(R1+R3)}\right] + \left[ISRC \times \frac{(R1 \times R3)}{(R1+R3)}\right]$$

User Signal — Dark Level Bias — Sensing Signal

$$BCS5 = \text{binary \% fullscale} \times \left[\left(\frac{[VCC \times (R2 \times R3)] + [ISRC \times R1 \times R2 \times R3]}{(R1 \times R2)+(R1 \times R3)+(R2 \times R3)}\right)\right]$$

EX1001, 7:17-25, 10:9-12, 11:10-15. Neither Whitted nor Bell have any disclosure of a bias that adjusts a signal (e.g., "combined signal") as recited by the challenged claims. Petitioner does not assert otherwise.

This is fatal to Ground 3. The Board's decision in the failed *Samsung* IPR is instructive. The *Samsung* petitioner asserted the Godwin reference, which it alleged disclosed a "combined signal," in combination with Thayer, which it alleged disclosed "minimum brightness threshold." EX2013, 13. This is analogous to Petitioner's allegations here where Petitioner asserts that the combination of Gettemy, Kerman, and Rosenzweig (like Godwin) disclose a "combined signal" while Whitted and Bell (like Thayer) disclose a "minimum" brightness. Pet., 66-

67. The *Samsung* petitioner conceded that Godwin did not disclose a "dark level bias," like Petitioner here concedes that Gettemy does not disclose a "dark level bias." EX2013, 13; Pet., 66. Further, like the *Samsung* petitioner, Petitioner argues that the need for a minimum brightness was known in the art and that a "minimum" brightness level was sufficient to disclose a "dark level bias." Pet., 66-72.

While Whitted and Bell, like Thayer, disclose a minimum threshold brightness level, that is not a "dark level bias" as the Board explained in a prior IPR rejecting this same argument that a "dark level bias" was obvious based on a known need to adapt screen brightness for dark conditions and a disclosure of a minimum brightness level.

> Petitioner asserts, relying on other references, that the need to adapt screen brightness for dark conditions was a well-known problem that utilized the well-known solution of maintaining screen brightness above a minimum level. However, the ***claim limitation recites more than merely maintaining screen brightness above a minimum level***; ***it recites maintaining the screen brightness above a minimum level in a particular way*** that is not sufficiently addressed by Petitioner or Dr. Hobbs. Even assuming maintaining screen brightness above a minimum level to adapt for dark conditions was a well-known solution, ***Petitioner has not sufficiently established that one of ordinary skill in the art would apply the solution in the manner claimed by Patent Owner***. Specifically, Petitioner has not established

> that the combination of Thayer and Godwin teaches ***the dark level bias adjustment of the combined signal as claimed***, or that ***performing the dark level bias adjustment of the combined signal (as opposed to, for example, performing the adjustment in some other manner) would have been obvious to one of ordinary skill in the art***.

EX2013, 14-15.

As the Board recognized, the "dark level bias" is more than "maintaining screen brightness above a minimum level" with a threshold value. *Id*. The '117 patent claims a specific way of adjusting brightness wherein the "dark level bias" mathematically *adjusts* the "combined signal" to generate a "brightness control signal" rather than applying a threshold. This is clear from the plain language of the claims and specification. For example, claim 1 recites "a dark level bias configured to adjust the combined signal to generate a brightness control signal." Similarly, the preferred embodiments teach that the "dark level bias" mathematically *adjusts* the "combined signal" to generate a "brightness control signal" as shown in the annotated equations above. EX1001, 7:17-25, 10:9-12, 11:10-15. The preset minimum brightness thresholds described in Whitted and Bell do not mathematically adjust any signals to create new signals. Whitted and Bell thus do not disclose a "dark level bias" as claimed in the '117 patent. EX2013, 14-15.

Therefore, because the "minimum power level" in Whitted and the "minimum" in Bell are not a "dark level bias," the combination of Gettemy, which Petitioner admits does not disclose a "dark level bias," with Bell and Whitted would not yield the "dark level bias" limitations. Thus, Ground 3 fails and institution should be denied.

VI. THE BOARD SHOULD EXERCISE DISCRETION UNDER 35 U.S.C. § 314(A) AND DENY INSTITUTION

This is the *fifth* petition regarding the '117 patent. The previous four petitions, which asserted eleven grounds against independent claims 1 and 15, were denied institution on the merits. EX2011, EX2013, EX2014, EX2017, EX2018, EX2020, EX2021, EX2023. In *General Plastic*, the Board "recognize[d] the potential for abuse of the review process by repeated attacks on patents." *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 16-17 (P.T.A.B. Sept. 6, 2017) (precedential Section II.B.4.i). The *General Plastic* factors for discretionary denial are applicable even though Petitioner did not file the prior petitions. *Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, Paper 11 at 2 (P.T.A.B. Apr. 2, 2019) (precedential, petition denied under § 314(a)). *General Plastic* factor 3 strongly favors denial, and factors 4-6 additionally favor denying institution. Factors 2 and 7 are neutral, and factor 1 cannot overcome the other factors. *United Fire Prot. Corp. v. Engineered Corrosion Sols., LLC,* IPR2018-00991, Paper 10 at 12 (P.T.A.B. Nov. 15, 2018)

("[N]ot all the factors need to weigh against institution for [the Board] to exercise [its] discretion under §314(a)" to deny institution.).

Factor 3, which "addresses whether [Petitioner] had access to a Board decision or a preliminary response . . . such that [Petitioner] would have been in a position to gain a benefit from having that information before filing its [] petition," weighs *strongly* in favor of denying institution. *Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9 at 10 (P.T.A.B. Oct. 28, 2020) (precedential as to discretionary denial of joinder). Petitioner should not be allowed to use the Board's "decisions as a roadmap." *General Plastic*, Paper 19 at 17. Petitioner here had the opportunity to use Patent Owner's preliminary responses and Board decisions denying institution from *four* prior IPRs. EX2012, EX2013, EX2015, EX2016, EX2017, EX2019, EX2020, EX2022, EX2023. Weighing against denial, Petitioner was aware of these proceedings (Pet., 1-2) and "had ample opportunity to study the arguments raised by Patent Owner, and the Board's findings and conclusions of law, regarding the claims of the [] patent commonly challenged." *United Fire*, Paper 10 at 13. Therefore, this factor weighs very strongly against institution.

Factor 4 concerns when Petitioner learned of the asserted art. *General Plastic*, Paper 19 at 16. While Petitioner does not address this issue (Pet., 5), at least Gettemy and Whitted were known to Petitioner well before filing the Petition. *See HTC Corp. v. Ancora Techs., Inc.*, IPR2021-00570, Paper 17 at 10-13

(P.T.A.B. June 10, 2021) (references cited in public invalidity contentions considered known to accused infringers). Gettemy was an exhibit to, and discussed in, the *Samsung* IPR petition and was submitted with Microsoft's reexamination request. EX2011, iv, 45, 62; EX1034, v, 6. Petitioner admits it was aware of Whitted, submitted in Microsoft's reexamination request filed October 7, 2022. Pet., 6; EX1034.

Stoughton, Mierzwinski, Nagai, Gettemy, Bell, and Whitted are U.S. patents that could easily have been found with reasonable diligence. *Cf. General Plastic*, Paper 19 at 20 ("The relevant issue under factor 2 is . . . whether [the prior art references] could have been found with reasonable diligence."). Kerman and Rosenzweig were publicly available manuals which similarly could have been found with reasonable diligence. Yet, Petitioner waited nearly a year after suit was filed without any explanation for the elapsed time. Thus, Factor 4 weighs in favor of denying institution as a result.

Factor 5 considers "whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent." *General Plastic*, Paper 19 at 16. All challenged claims were challenged in all four prior IPRs. Yet Petitioner waited years after the latest of the prior Petitions and only two days before its statutory deadline to file.

EX2018, EX2021. Petitioner provides no explanation for the delay.[7] *SEKO S.p.A. v. CM2W JSC*, IPR2020-01636, Paper 9 at 10 (P.T.A.B. Jan. 7, 2021) ("To the extent a reasonable explanation exists for Petitioner's delay, it was incumbent upon Petitioner to identify those circumstances in its Petition."). Factor 5 weighs in favor of denying institution as a result.

Petitioner states that "[m]indful of the Board's limited resources, this Petition challenges only six claims." Pet., 5. This ignores the fact that the Board already considered four failed challenges to these same claims of the '117 patent, with eleven total grounds asserted against just independent claims 1 and 15. "In general, having multiple petitions challenging the same patent, *especially when not filed at or around the same time* as in this case, is inefficient and tends to waste resources." *Valve Corp.*, Paper 11 at 15.

Furthermore, the Patent Office is already reconsidering the patentability of the challenged claims in the pending reexamination in which this Petition and its

[7] Petitioner should have addressed *General Plastic* in the Petition and should not be authorized to file additional briefing. *SEKO S.p.A. v. CM2W JSC*, IPR2020-01636, Paper 8 at 5 (P.T.A.B. Dec. 2, 2020) (denying petitioner's request for additional briefing "[b]ecause a *General Plastic* argument was reasonably foreseeable and Petitioner chose not to address it in the Petition, Petitioner has not shown good cause why a reply brief should be authorized in this case.").

cited prior art are of record and being considered. Duplicating the efforts of the Central Reexamination Unit, which already has this Petition and its asserted prior art to consider in the reexamination, would be an inefficient use of Office resources. Factor 6 thus weighs in favor of denying institution.

"The *General Plastic* factors are also not exclusive and are not intended to represent all situations where it may be appropriate to deny a petition." Trial Practice Guide (Nov. 2019), 58. Considerations of fairness and efficiency also dictate that the Board should exercise discretion to deny institution. The legislative history of the AIA "recognize[d] the importance of quiet title to patent owners to ensure continued investment resources." H.R. REP. 112-98(1) at *48. AIA proceedings "are not to be used as tools for harassment … through repeated litigation and administrative attacks on the validity of a patent," because "[d]oing so would frustrate the purpose of the section as providing quick and cost effective alternatives to litigation." *Id.*

The '117 patent was challenged unsuccessfully four different times, by four sophisticated petitioners—Samsung, VIZIO, LG, and Hisense. Allowing this challenge to proceed would frustrate Congress's intent, allowing "repeated … administrative attacks on the validity of a patent." *Id.* Further, since the Office is already considering the patentability of the challenged claims in an ongoing reexamination in which this petition and its art is before the Office, it would be

inefficient and a waste of Office resources to institute this IPR when the reexamination is already underway. The CRU has already expended Office resources reviewing the claims and preparing and issuing a first Office Action, EX2024, and will consider the arguments made in the Petition during the reexamination because they have been submitted in an IDS. EX2025.

Efficient administration of the Office dictates that this IPR be denied, and the more advanced and ongoing reexamination be allowed to proceed. *See* Trial Practice Guide, 56 (Director's discretion informed by 35 U.S.C. § 316, which requires the Director to consider "the efficient administration of the Office"); *see also* Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding (April 2019), 84 FR 16654-01, 16657 (Apr. 22, 2019) ("The Board also may deny institution under 35 U.S.C. 325(d) of a requested AIA trial proceeding if a *parallel Office proceeding*, for example, is in a more advanced stage and involves overlapping issues with the proposed AIA trial proceeding.").

Accordingly, the Board should exercise its discretion and deny institution.

VII. CONCLUSION

The Petition fails to demonstrate a reasonable likelihood that the Petitioner will prevail with respect to at least one claim and should thus be denied. Moreover, the Board should exercise its discretion to deny institution in view of four prior

failed IPR proceedings and the ongoing reexamination.

Respectfully submitted,

KRAMER ALBERTI LIM & TONKOVICH LLP

/Russell S. Tonkovich/

Russell S. Tonkovich
Reg. No. 64,101
Lead Counsel for Patent Owner

Date: July 20, 2023

577 Airport Blvd., Suite 250
Burlingame, CA 94010
Tel: (650) 825-4300
Fax: (650) 460-8443

CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Preliminary Response complies with the type-volume limitation of 14,000 words, comprising 13,822 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Patent Owner Preliminary Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

KRAMER ALBERTI LIM & TONKOVICH LLP

/Russell S. Tonkovich/

Russell S. Tonkovich
Reg. No. 64,101
Lead Counsel for Patent Owner

Date: July 20, 2023

577 Airport Blvd., Suite 250
Burlingame, CA 94010
Tel: (650) 825-4300
Fax: (650) 460-8443

Case IPR2023-00778
U.S. Patent No. 8,223,117

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER PRELIMINARY RESPONSE UNDER 37 C.F.R. § 42.107(a)** and associated Exhibits 2001-2025 were served in their entireties on July 20, 2023, upon the following parties via electronic mail:

Matthew J. Brigham (Lead Counsel)
Andrew C. Mace (Back-Up Counsel)
Patrick W. Lauppe (Back-Up Counsel)
Dena Chen (Back-Up Counsel)
Mark R. Weinstein (Back-Up Counsel)
COOLEY LLP
mbrigham@cooley.com
amace@cooley.com
plauppe@cooley.com
dchen@cooley.com
mweinstein@cooley.com

Respectfully submitted,

KRAMER ALBERTI LIM & TONKOVICH LLP

/Russell S. Tonkovich/

Russell S. Tonkovich
Reg. No. 64,101
Lead Counsel for Patent Owner

Date: July 20, 2023

577 Airport Blvd., Suite 250
Burlingame, CA 94010
Tel: (650) 825-4300
Fax: (650) 460-8443